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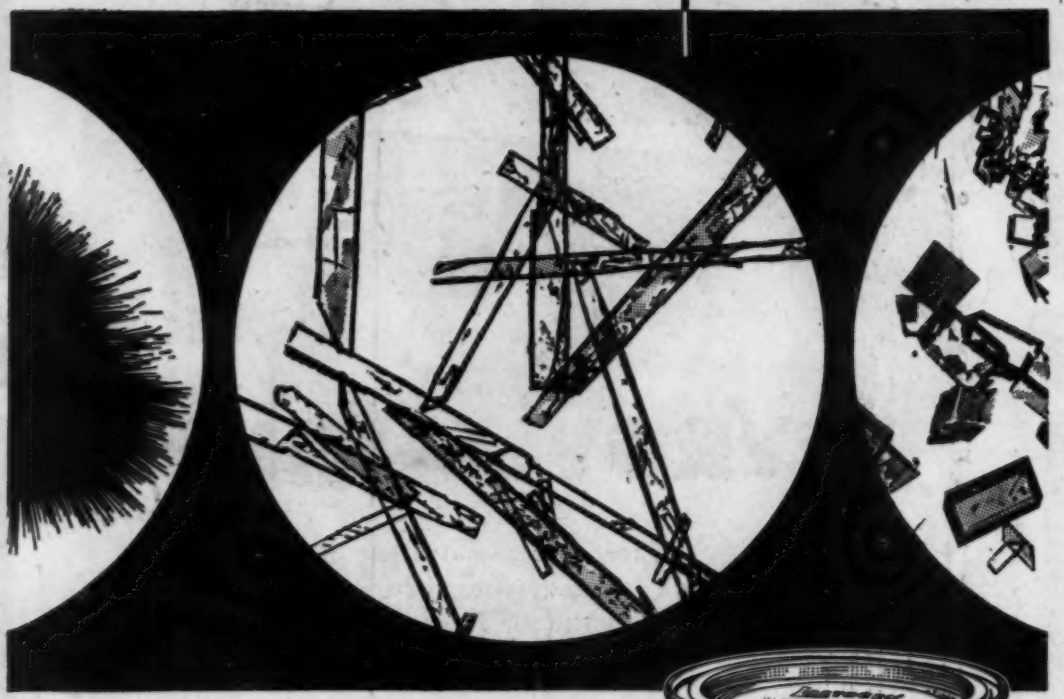

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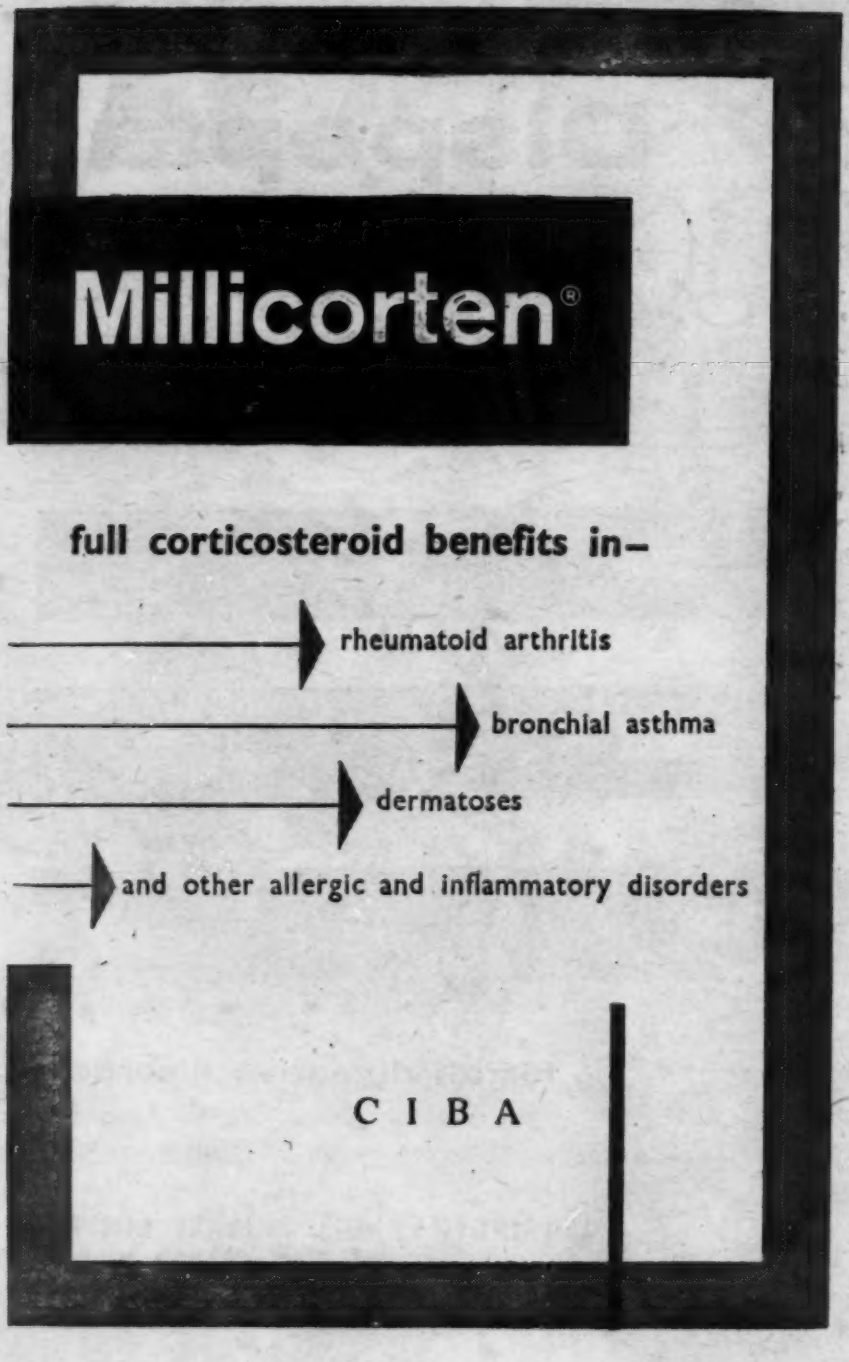
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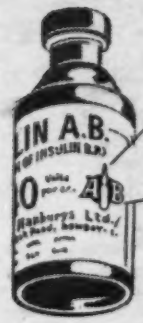

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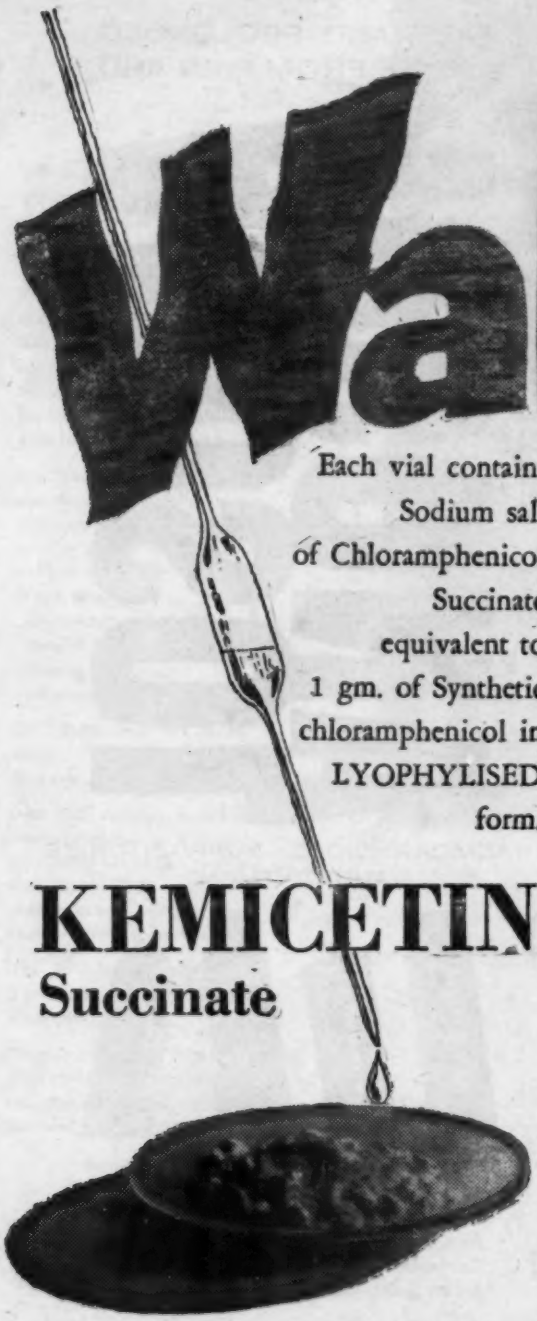

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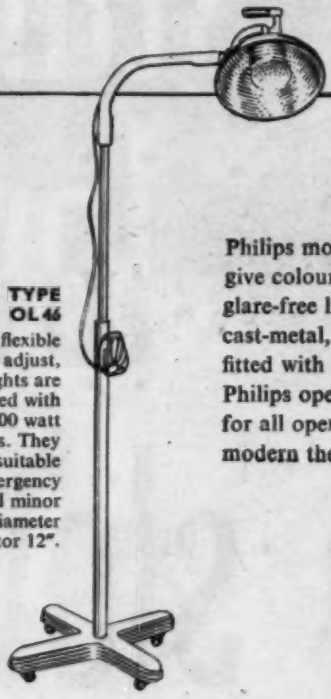

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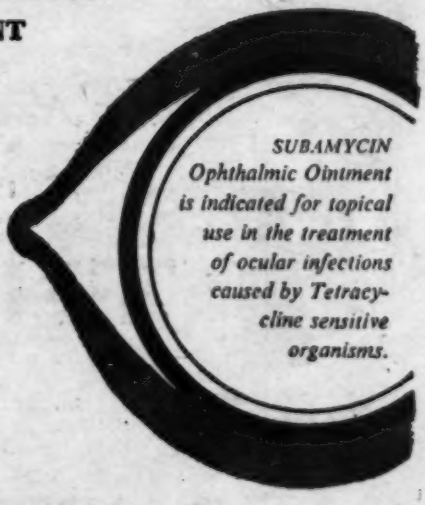

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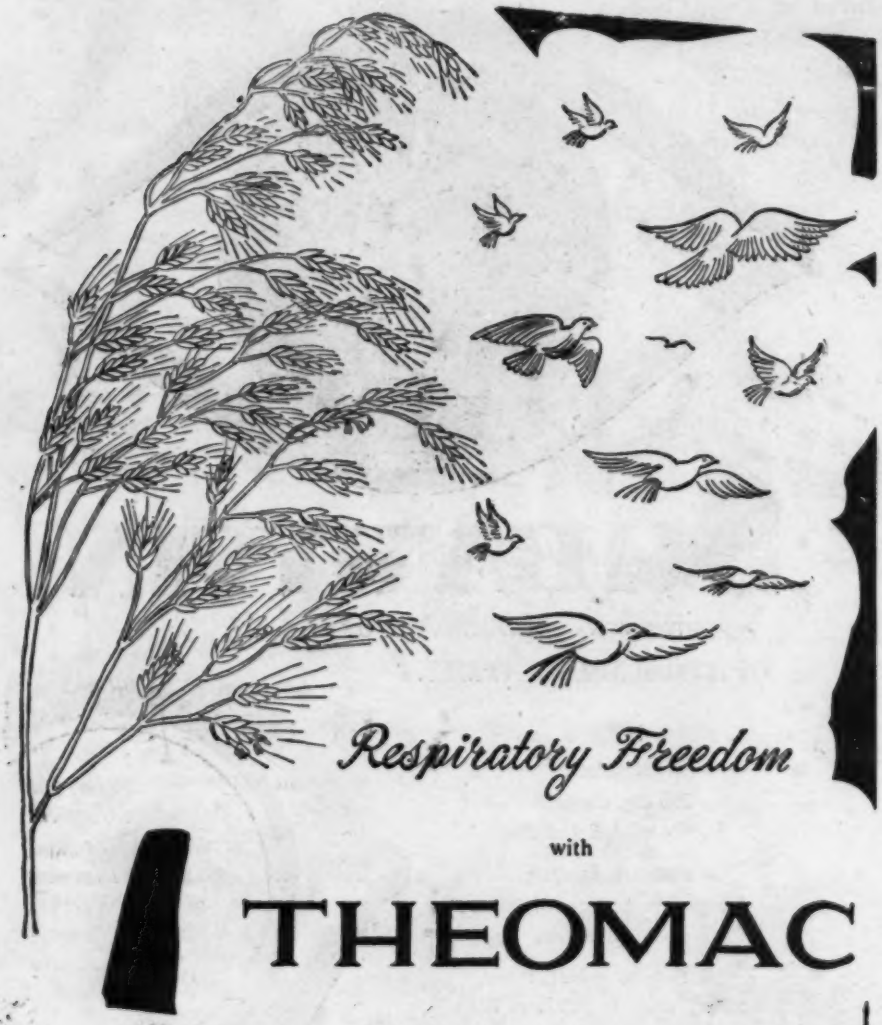

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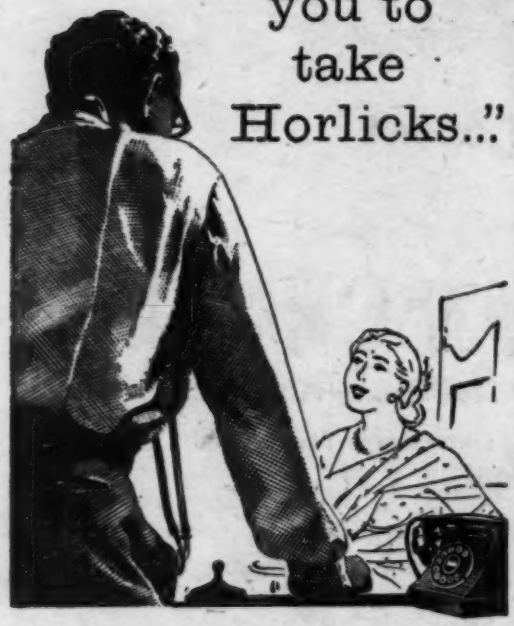

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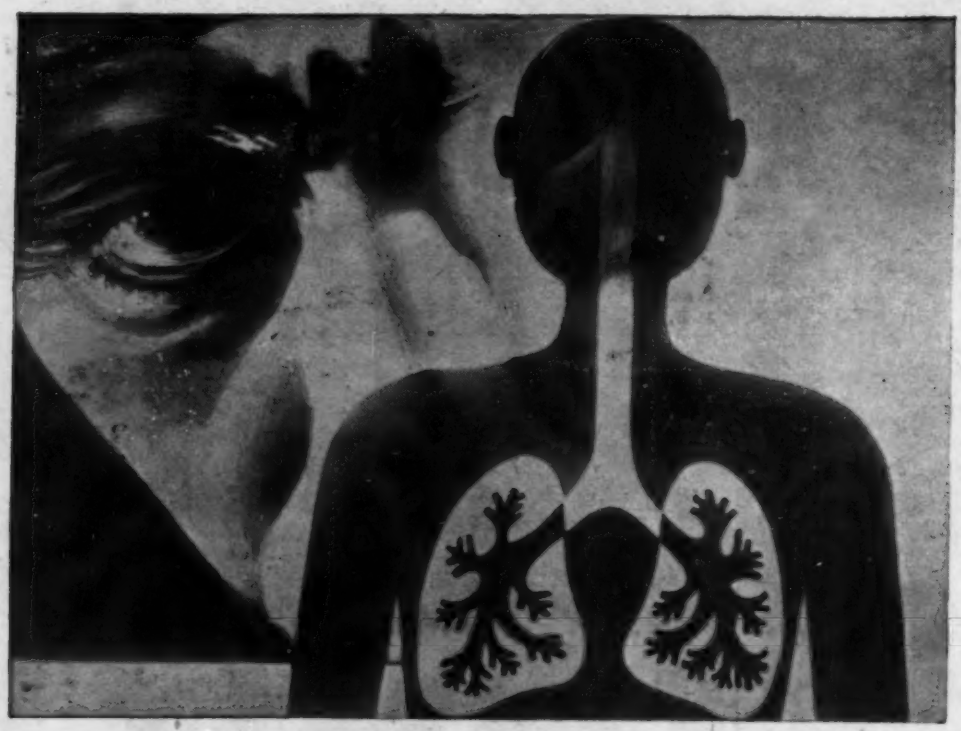

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ORIGINAL ARTICLES

PERCUTANEOUS RENAL BIOPSY IN HYPERTENSION

A Report of 37 Cases

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Excellent studies of renal vessels in hypertension have been made using biopsy specimen obtained during sympathetectomy operation (Castleman and Smithwick, 1943 ; Heptinstall, 1954). Much emphasis, however, has not been laid on the aetiologic diagnosis as based upon histopathology. Pyelonephritis is recognised to be an important cause of hypertension (Weiss and Parker, 1939 ; Fishberg, 1954), and the prognosis becomes grave if it supervenes on pre-existing hypertension (Saphir and Taylor, 1952). In many instances a previous history of urinary tract infection is lacking and the diagnosis of chronic pyelonephritis specially the lenta variety becomes very difficult by conventional means (Schreiner, 1958 ; Saphir and Cohen, 1959). In these cases histological examination of the kidney offers more reliable method of diagnosis. The successful use of Vim Silverman needle for obtaining adequate renal tissue for making aetiologic diagnosis of various renal diseases (Sala, 1957 ; Mueharcke *et al*, 1955) prompted us to utilise this technique for study of renal condition in hypertension.

MATERIAL AND METHODS

37 hypertensive patients with diastolic blood pressure of 100 mm. Hg. or more have been studied. There were 25 males and 12 females, and their ages ranged between 14 and 60 years.

The diastolic pressure was up to 110 mm. Hg. in 19 cases, between 111 and 130 mm. in 12 cases and above 130 mm. in 6 cases.

In addition to a thorough clinical examination the optic fundi were examined and the results were expressed according to the classification of Wagner and Keith (1939). Routine analysis of urine including a cultural examination was done in all cases.

Renal biopsy was performed using Vim Silverman needle as described by Sarin and Sarin (1958). The tissue thus obtained was stained with haematoxylin and eosin and with Congo red when indicated. The renal arterioles were classified according to the criteria of Castleman and Smithwick (1943).

OBSERVATIONS

The findings in this study were considered in two groups, viz., (1) arteriolar changes and their relation with other factors, and (2) histopathologic diagnosis.

I. ARTERIOLAR CHANGES :

The arterioles were normal in 10 cases. Grade I abnormality, i.e., minor irregular thickening of the arterial wall, was seen in 11 cases. Grade II abnormality, i.e., a thickened arterial wall the thickness being equal to the diameter of

the lumen, was seen in 7 cases (Fig. 1, *vide* Plate). Grade III abnormality, i.e., thickening of the vessel wall exceeding the diameter of the lumen, was seen in 8 cases (Fig. 2, *vide* Plate). Arteriolar necrosis and spasm of muscular coat were not seen in any case. The arterioles were not visualised in one case.

The relationship of vascular changes with diastolic B.P. is shown in Table 1. That a relation does exist is shown by the fact that out of 18 cases having a diastolic B.P. of 110 or less, 11 showed arteriolar thickening though 7 had normal renal arterioles and none showed abnormalities of grade III. The relationship was not linear as even normal renal arterioles were seen in one case with a diastolic pressure above 130 mm. Hg.

TABLE 1—SHOWING RELATIONSHIP OF VASCULAR CHANGES WITH THE DIASTOLIC BLOOD PRESSURE

Diastolic B.P. (mm. Hg)	No. of cases in different grades of renal arteriolar abnormality			
	Normal	G. I	G. II	G. III
Up to 110 ...	7	9	2	—
111 — 130 ...	2	2	2	6
Above 130 ...	1	—	3	2

The blood vessel grading was correlated with age for assessing the role of normally occurring nephrosclerosis vitiating the interpretation of vascular grading (Table 2). It will be seen that the age bore no constant relation to the degree of vascular changes.

TABLE 2—SHOWING INFLUENCE OF AGE ON VASCULAR CHANGES

Age (years)	No. of cases in different grades of blood vessel changes			
	Normal	G. I	G. II	G. III
Up to 30 ...	5	4	3	2
31 — 50 ...	4	7	1	5
Above 50 ...	1	—	3	1

The renal vascular changes were correlated with the retinopathy also (Table 3). The fundus was not visualised in 1 case having arteriolar change of grade II.

TABLE 3—SHOWING CORRELATION OF RETINOPATHY WITH RENAL VASCULAR CHANGES

Changes in renal arterioles (grades)	No. of cases in different grades of fundal changes				
	Normal	G. I	G. II	G. III	G. IV
Normal ...	3	4	2	1	—
G. I ...	2	7	1	1	—
G. II ...	0	2	2	1	1
G. III ...	0	2	3	2	1

There appears to be some correlation, as normal and grade I retinopathy were observed more often with normal or grade I vascular changes. A normal fundus was not seen in any case with vascular abnormality of grade II or III. Retinopathy of grade IV was encountered only with associated renal vascular abnormality of grade II or III. However, the correlation was not absolute, as retinopathy of grade III was encountered in the presence of normal arterioles in 1 instance and grade I retinopathy was seen in 2 instances with renal vascular changes of grade III.

II. HISTOPATHOLOGIC DIAGNOSIS :

In two cases the tissues obtained were insufficient for a histopathologic diagnosis. The histologic diagnosis arrived at in the other 35 cases is shown in Table 4.

TABLE 4—SHOWING HISTOLOGIC DIAGNOSIS OF 35 CASES

Histologic diagnosis	No. of cases
Normal	4*
Essential hypertension	11
Chronic pyelonephritis	9
Acute glomerulonephritis	3
Subacute nephritis	4
Chronic glomerulonephritis	1
Focal glomerulonephritis	1*
Amyloidosis	2
Total ...	35

* In the final assessment these cases have been considered under essential hypertension.

The clinical diagnosis arrived at by considering the history, clinical findings and urine analysis was borne out by histopathologic examination in 21 cases. These included 14 cases of essential hypertension, 3 of pyelonephritis and 2 each of acute glomerulonephritis and subacute glomerulonephritis.

Five cases presenting with a picture of nephrotic syndrome turned out to be cases of amyloidosis in 3 instances and of subacute nephritis in 2 instances.

Essential hypertension was diagnosed in 16 cases. It was considered to be present either when no abnormality could be detected in the histopathological specimen (4 cases in this study) or when it was characterised by the absence of proliferative glomerular changes or gross inflammatory changes in the interstitial tissue. It has to be admitted that in the presence of advanced hyalinisation of glomeruli it may be impossible to distinguish this condition from chronic glomerulonephritis. Four out of these 15 cases showed no change in renal blood vessels. Varying degrees of glomerular hyalinisation or fibrosis were seen in 11 cases and the glomeruli were normal in 4 cases. Four cases showed thickening of the basement membrane. The tubules were normal in 9 cases and showed atrophic or degenerative changes in 6. Because of the technical difficulties involved, cloudy swelling of the tubular epithelium was not diagnosed in any case.

Pyelonephritis was diagnosed in 9 cases. The glomeruli were abnormal in all cases. Periglomerular fibrosis (Fig. 3, *vide* Plate) was seen in 6 cases and varying degree of hyalinisation and glomerular fibrosis were seen in 6 cases. Cystic dilatation of the tubules was seen in 8 cases. and colloid casts were seen in all of them. All these cases showed a marked increase of interstitial tissue (Fig. 4, *vide* Plate) and had considerable leucocytic infiltration. Plasma cells were seen in 3 cases. The urine culture was positive in 3 out of 9 cases while 2 other cases who had a positive urine culture showed no histologic evidence of pyelonephritis.

Diffuse glomerulonephritis was diagnosed in 8 cases—acute in 3, subacute in 4 and chronic in 1. Glomeruli were abnormal in all of them showing varying grades of hypercellularity in 7 cases and complete hyalinisation in 1 case. The tubules were normal in 4 cases and showed degenerative changes in 4. One case had increase in interstitial tissue with mild focal cellular infiltration and reduction in the number of tubules. This was a case of chronic glomerulonephritis.

Focal glomerulonephritis was diagnosed in 1 case. The changes in this case were not interpreted to be severe enough to lead to hypertension, and it was considered that this may be a case of essential hypertension, the focal changes being only coincidental in nature.

Amyloidosis was diagnosed in 2 cases.

Complications of Renal Biopsy

Transient or microscopic gross haematuria was found in all cases and hence it has not been considered as a complication. Dysuria and pain in the lumbar region were observed in 2 cases, which subsided promptly with symptomatic treatment.

One case with uraemia developed a perirenal haematoma, and died on the fourth day. Such a complication developing in uraemic patients has been observed by Zelman (1954).

Comments

That a small piece of renal cortex obtained by biopsy is fairly representative of renal pathology is no longer disputed (Sala, 1957 ; Mueharcke, *et al*, 1955). Early malignant hypertension and chronic atrophic pyelonephritis where the changes are patchy, however, may not be diagnosed by a random biopsy (Heptinstall, 1954).

The finding of normal renal vessels in 10 cases, including 4 with essential hypertension, out of thirty-seven cases is significant. It suggests that the development of hypertension is primary and nephrosclerosis follows in its wake even in essential hypertension. Similar observations have been made by Castleman and Smithwick (1943) and Heptinstall (1954) and in experimental studies of Floyer (1951) and Selye and Stone (1946). In the present series cases of symptomatic hypertension only have been considered while patients with asymptomatic and transient hypertension, who do not seek medical advice and fall relatively early in natural history of hypertension, have not been studied. One can presume that the incidence of normal renal vessels would be still higher in early hypertension.

The degree of diastolic hypertension bore no constant relation to the renal vascular changes and the observation is in conformity with that of Heptinstall (1954).

A fair correlation though not absolute was seen between hypertensive retinopathy and renal arteriolar changes and it confirms the earlier observations made by Castleman and Smithwick (1943).

Interpretation of small scarred areas with leucocytic infiltration is really a difficult matter. When however these are associated with atrophic and dilated tubules containing deeply staining eosinophilic casts, it is most likely that chronic pyelonephritis is the cause (Heptinstall, 1954). Small scarred areas which may be interpreted as results of renal ischaemia have not been considered to be indicative of pyelonephritis. The urine cul-

ture was positive in only 3 cases. This does not vitiate the histologic diagnosis, for pyelonephritis may be present even in the presence of negative urine cultures (Schreiner, 1958).

Pyelonephritis has been diagnosed in 9 instances in this study and is obviously a high figure considering the fact that 2 cases who had clinical and bacteriological evidence of pyelonephritis without histological changes in biopsy specimen makes this figure 11, for it is known that in some instances pyelonephritis may not be evident in renal biopsies (Heptinstall, 1954). That pyelonephritis was clinically diagnosed in only 5 out of these 11 cases suggests that renal biopsy should be more frequently employed to evaluate the renal condition in assessment of hypertension.

Now that effective antibiotic therapy is available, the diagnosis of pyelonephritis is no longer merely a matter of academic interest. Institution of effective antibiotic therapy for pyelonephritis may go a long way in altering the prognosis of hypertension.

An interesting point in this connection is the relation between pyelonephritis and hypertension. It has generally been recognised that pyelonephritis is an important cause of hypertension. That the reverse also may be true in some instances has been suspected clinically (Yow and Sakuma, 1959), and Wood's (1958) interesting experiments in animals have proved it beyond doubt.

In a given case having both hypertension and pyelonephritis it would really be a moot point to discuss which came first. But as long as it is recognised that pyelonephritis is one of the main causes of acceleration of hypertensive disease the clinical aspect of the problem becomes clear.

Amyloidosis was present in two out of 37 cases. Gutman (1958) and Fishberg (1954) considered it to be a rare cause of hypertension. Our observations are more in accord with those of Zuckerbrod (1956) who did not find this association infrequent.

Summary

Renal biopsies have been studied in 37 cases of hypertension. Percutaneous biopsy is a safe procedure.

Pyelonephritis may very often be missed clinically and renal biopsy affords a good diagnostic method for its recognition.

Renal arterioles were often normal in the presence of established hypertension. The renal blood vascular abnormalities bore no constant relationship with blood pressure.

References

Castleman, B. and Smithwick, R. H.—*J.A.M.A.*, **121**: 1256, 1943.

Fishberg, A. M.—Hypertension and Nephritis, 1954, Lea and Febiger, Philadelphia, p. 642.

Flover, M. A.—*Clin. Sc.*, **10**: 405, 1951.

Gutman, A. B.—In Cecil & Loeb's Textbook of Medicine, 1958, Saunders, Philadelphia.

Heptinstall, R. B.—*Brit. Heart J.*, **16**: 133, 1954.

Muehareke, R. C., Kark, R. M. and Pirani, C. L.—*New England J. Med.*, **253**: 537, 1955.

Sala, A. M.—Third International Congress of Clinical Pathology, Brussels, 1957.

Saphir, O. and Cohen, N. A.—*Arch. Int. Med.*, **104**: 748, 1959.

Saphir, O. and Taylor, B.—*Ann. Int. Med.*, **36**: 1017, 1952.

Sarin, L. R. and Sarin, J. C.—*J. Indian M. A.*, **31**: 319, 1958.

Schreiner, G. E.—*Arch. Int. Med.*, **102**: 32, 1958.

Selye, H. and Stone, H.—*J. Urol.*, **56**: 399, 1946.

Wagner, H. P. and Keith, N. M.—*Medicine*, **18**: 317 1939.

Weiss, S. and Parker, F.—*Ibid.*, **18**: 221, 1939.

Woods, J. W.—*J. Clin. Invest.*, **37**: 1686, 1958.

Yow, M. E. and Sakuma, T.—Hypertension: The first Hahnemann Symposium on Hypertensive Disease, Saunders, Philadelphia and London, 1959, p. 53.

Zelman, S.—*J.A.M.A.*, **154**: 990, 1954.

Zuckerbrod, M.—*Am. J. Med.*, **21**: 227, 1956.

THERAPEUTIC NERVE BLOCKS

Report of 100 Cases

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Pain clinics have been established at various hospitals in Great Britain and the United States. They are run by anaesthetists specially trained in local nerve blocks. The author has performed therapeutic nerve blocks in the operation theatre. Almost all the cases were referred from various surgical, medical, and dental units of the hospital. The patients had previously received some form of therapy in the course of illness without significant relief.

Pain may be an expression of many diseases and all types of pain are not amenable to nerve blocks. Moreover, relief of pain by these procedures may mask the presence of a grave underlying disease, sometimes malignant, the treatment of which will inevitably be delayed, to the great detriment of the patient. The person performing these blocks must examine, and, if necessary, investigate the patient, before performing such nerve

blocks. Pain due to psychogenic factors will not be relieved by nerve blocks.

The author recommends the injection of a small amount of a short-acting local analgesic like lignocaine before injecting absolute alcohol for prolonged relief of pain. The small amount of the local analgesic recommended should not exceed the amount of absolute alcohol to be injected. When the local analgesic has produced the desired relief, absolute alcohol can be injected. A larger amount of a local analgesic seeping into a larger area of tissue may produce temporary relief. But this relief of pain will not be maintained because the smaller amount of absolute alcohol subsequently injected might not have come in contact with the affected nerve. Again, if the local analgesic fails to produce relief, benefit from absolute alcohol may not be afforded.

TABLE 1—SHOWING CLINICAL CONDITION OF 100 CASES IN WHICH THERAPEUTIC NERVE BLOCKS HAVE BEEN PERFORMED BY THE AUTHOR

Clinical conditions	No. of cases	No. of injections	Relief		
			Marked	Moderate	Slight
Gasserian ganglion block for trigeminal neuralgia	35	1-3	31	2	2
Intercostal nerve block for fractured ribs ...	10	1	10	—	—
Thoracic paravertebral block for fractured ribs	4	1	4	—	—
Lumbar paravertebral block for Buerger's disease	8	1	4	3	1
Stellate ganglion block for vascular spasm ...	3	1-7	2	1	—
Stellate ganglion block for causalgia ...	1	10	1	—	—
Stellate ganglion block for cerebral thrombosis	1	7	—	—	1
Stellate ganglion block for atrophic rhinitis	4	multiple*	1	1	2
Sacral epidural injection for spinal headache	20	1-2	16	3	1
Sacral epidural injection for coccygodynia	2	1	—	2	—
Brachial plexus block for pain in shoulder	3	1	—	1	2
Supraorbital, supratrochlear nerve block	2	1	—	1	1
Infraorbital nerve block	1	1	1	—	—
Mandibular nerve block	2	1	—	2	—
Subarachnoid alcohol injection for pain of cancer of cervix and uterus	4	1	1	3	—

* Still under treatment.

Table 1 gives the details of cases in which therapeutic nerve blocks were performed by the author.

Trigeminal ganglion block was performed on 35 patients with trigeminal neuralgia, with 0·5-0·75 ml. of absolute alcohol, preceded by 0·5-0·75 ml. injection of 2 per cent lignocaine. Relief was immediate, except in one case which took five days for complete relief. In two patients there was only slight relief. The period of relief lasted from 3-18 months or longer. On recurrence of pain in three cases, the block was repeated with success. Trigeminal neurectomy had been done in three patients of this series, but pain had recurred after 8-13 months of neurectomy. In all the three cases relief was obtained by injection of absolute alcohol in the region of the trigeminal ganglion. The patients were previously warned of anaesthesia on one side of the face. As prophylaxis against trophic keratitis sterile liquid paraffin eye drops were prescribed. The patients were advised not to move in the dust and, preferably, to put on spectacles with plain glasses.

Intercostal block was performed on 10 patients who had multiple fractured ribs. Unicaine fortis 0·5-1 ml. was injected in the intercostal nerves lying in relation to the fractured ribs along with one intercostal nerve above and one below the fractured ribs. Relief from pain was lasting. In four cases, the ribs were fractured behind their angles. Paravertebral blocks with lignocaine or procaine were given in the paravertebral space opposite the fractured ribs. Repetition of the block was not necessary in any of these cases.

Repeated stellate ganglion block was performed in acute vascular spasm of the brachial artery (Bahl, 1959), causalgia (Bahl, 1960), cerebral thrombosis and atrophic rhinitis. It is stressed that for relief of spasm, the sympathetic block must be repeated to produce a sustained period of sympathetic paralysis. Improvement may be apparent after several such injections have been given. In causalgia, relief from pain may be apparent after a few injections have been given at weekly or biweekly intervals. Nerve block of the affected somatic nerve must also be considered in addition.

Relief from sacral epidural injection of normal saline for spinal headache was immediate in all

cases excepting one. Repetition of injection was necessary in two cases after two days.

Eight patients of Buerger's disease were referred for lumbar sympathetic block for assessing the value of surgical sympathectomy. It is stressed here that only dilute solutions of the local analgesic drug, lignocaine or procaine, should be used. The author uses 0·2-0·4 per cent lignocaine solution for this purpose. Stronger solutions produce a sensory or even motor paralysis and will not correctly predict the efficacy of surgical sympathectomy.

Drugs Used

Lignocaine or procaine, 1-2 per cent, has been used to produce short-lasting results. Repeated injections with these drugs were made for longer-lasting results. For prolonged effects, absolute alcohol has been used. The dosage of this drug for individual blocks did not exceed 1 ml. Injection with absolute alcohol was preceded by the injection of lignocaine in an equivalent dose.

Unicaine fortis (containing 2·5 per cent benzocaine with 0·5 per cent urea quinine HCl) was given for intercostal blocks and in one case for digital nerve block.

For relief of spinal headache, 30-40 ml. of normal saline was injected in the sacral epidural space.

Techniques Employed

Gasserian ganglion block—The patient lies supine looking directly upwards. The person performing the block stands on the side to be injected. After aseptic precautions, an intradermal wheal is raised 2·5 cm. lateral to the angle of the mouth. A long needle with stylet is directed through this wheal upwards, backwards and inwards. This direction varies for individual patients and only experience is the best guide to success. The needle hits the base of the skull and is made to negotiate through the foramen ovale. Not more than 1 cm. of the needle is introduced beyond the base of the skull. Lignocaine 2 per cent 0·5-1 ml. is injected after negative aspiration test for blood and C.S.F. If the block is successful, anaesthesia along the distribution of the trigeminal nerve and cornea follows. Movements of the eyeball are tested to avoid oculomotor nerve palsy. This is followed by injection of 0·5-1 ml. of absolute alcohol. The patient is kept under observation for about an hour before sending him home.

Stellate ganglion block—The patient is positioned supine on the table with a pillow under the shoulders and the head which is turned to the opposite side. After aseptic precautions, an intradermal wheal is raised half-an-inch above the clavicle on the lateral border of the sternal head of the sternomastoid muscle. A long needle with stylet is inserted through this wheal directly backwards till it makes contact with the anterior surface of the transverse process of the 7th cervical vertebra. The needle is withdrawn 0·5 cm., after which 8 to 10 ml. of 2 per cent xylocaine (lignocaine) or procaine are injected, after a negative aspiration test for C.S.F. and blood. Typical Horner's syndrome appears within 1 to 3 minutes of the injection, with an 'illusion' of enophthalmos, narrowing of palpebral fissure, constriction of pupil, Guttmann's sign of nasal congestion, and anhidrosis.

Intercostal nerve block—The patient is arranged in a lateral position over the edge of the table or bed. After swabbing with an antiseptic and fixing sterile towels, the needle is introduced (through an intradermal wheal, if necessary) about 5 cm. behind the line of fracture, till it makes contact with the rib. It is then partially withdrawn and advanced till it slips past the lower border of the rib for about 0·5 mm. Lignocaine, 2 per cent, 1 ml. is injected, followed by injection of 0·5-1 ml. of unicaine fortis.

Paravertebral blocks—The patient lies in the lateral postiton. Wheals are raised opposite the lower borders of the dorsal spines, two finger-breadths from the middle line. A needle is introduced through each wheal perpendicular to the skin, until it strikes the bone which is near the lateral extremity of the transverse process. The needle is partially withdrawn and directed upwards over the upper border of the transverse process. It is advanced a little more, 1-2 cm. in lumbar region. Lignocaine, 1-2 per cent, 5-10 ml. is injected. For diagnostic lumbar sympathetic block, 0·2-0·4 per cent lignocaine solution is used.

Sacral epidural injection—The patient lies on his face. After aseptic precaution a wheal is raised near the apex of the sacral hiatus. A needle is inserted through the sacrococcygeal membrane so that it makes an angle of about 20° with the line drawn at right angles to the skin surface. Once through the membrane, the needle hub is depressed a further 45° towards the intergluteal cleft and advanced in the sacral canal. The needle is kept strictly in the middle line. After negative aspiration test for C.S.F. and blood 30-40 ml. of sterile normal saline is injected for spinal headache ; for pain, 0·5 per cent lignocaine 20 ml. is used.

Subarachnoid (alcohol) injection—The patient is placed in the semiprone position with the diseased side uppermost and head titled downwards

so that absolute alcohol, being lighter, does not ascend high up. After a lumbar puncture under sterile condition, 0·5 ml. of absolute alcohol is injected between T. 12 and L. 1. The patient is kept in this position for at least one hour.

Adjuvant Therapy

As a rule, no adjuvant analgesics have been used in this series. In two female patients with trigeminal neuralgia when the relief afforded was incomplete, and probably because of associated psychological elements, phenobarbitone 30 mg., b.i.d. and acetyl salicylic acid 300 mg., b.i.d. were given.

Complications

Oculomotor palsy was seen in one case after trigeminal ganglion block with absolute alcohol but was fortunately temporary and disappeared after 4 weeks. Probably the needle had gone a little too far to lie near the oculomotor nerve. Two cases of trigeminal ganglion block developed trophic keratitis. Drowsiness and dizziness were observed when larger amounts of lignocaine were used.

Summary

A report of 100 cases in which nerve blocks were performed for therapeutic purposes is presented. The value of nerve blocks is unquestioned but to get the best results these must be performed by persons specially skilled in such techniques and under aseptic conditions.

Acknowledgments

I am grateful to my colleagues in the various departments of the Irwin Hospital, New Delhi, for kindly referring the cases to me.

References

Bahl, C. P.—*J. Indian M. A.*, **33** : 17, 1959.
Idem—Ibid, **34** : 355, 1960.

BILIARY ASCARIASIS

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The distribution of *Ascaris lumbricoides* is almost worldwide, and in Assam its incidence is very high. Accurate figures are not available, but the consensus of medical opinion puts the infestation rate to be about 70 per cent in adults, and even higher in children. The parasite is found in the jejunum. It is often encountered during routine barium meal examination, and in upper abdominal operations. It is one of the common causes of acute intestinal obstruction, specially in children. The worms can enter the bile and the pancreatic ducts and give rise to jaundice and abscesses in the liver, and cause acute haemorrhagic pancreatitis after blocking the duct. They can penetrate the intestinal wall causing peritonitis, or even burrow into the abdominal wall causing abscesses. They can invade the lumen of the appendix causing appendicitis and be found encysted in the fallopian tubes (Manson-Bahr, 1957).

From Japanese and Chinese reports it appears that biliary ascariasis is more common in those countries than in India. Some comparative figures are given in Table 1.

Table 1—Showing the Number and Percentage of Cases of Biliary Ascariasis Obtained by Different Authors in Surgical Conditions

Authors	No. of cases operated on for diseased bileduct	No. of cases caused by ascaris	Percentage
Mang and Wang (1949)	Not given	Not given	13
Yang and Laube (1946)	Not given	19	—
Young and Burton (1958)	45	4	9

Clinically the cases may present two distinct patterns (Young, 1958):

(1) Periodical attacks of upper abdominal colicky pain, accompanied by fever and jaundice, in young adults, usually females. Young (1958) describes the pain as 'wriggling' and patients are seen to imitate it by wriggling their fingers. On x-ray examination the gall-bladder may or may not be found functioning, and more often than not, roundworm ova are found in the stool. Other signs such as muddy complexion, anaemia, and a protuberant abdomen are evident. The white blood cell count is raised. The patient is usually an young adult, and the male: female ratio is 1 : 3.

(2) The second type, occurring in still younger persons, presents with chronic dull pain over the right hypochondrium, and periodic and varying degrees of jaundice. The white cell count is raised. A non-functioning gall-bladder may be evident, and roundworm ova are found in the stool. There is usually a history of persistent roundworm infestation.

Three cases of biliary ascariasis encountered at the Labac Central Hospital in the district of Cachar, are described here in detail. In the third case of this series the diagnosis was arrived at during life and was confirmed by postmortem examination.

Case Reports

CASE 1 :

Promilla (II) Moorah's female child, aged 3 years, of Doyapore T. E. was admitted on 14-5-1957, complaining of irregular fever, pain in the upper abdomen, loose stools and progressive emaciation of 3 weeks' duration.

She was previously admitted into the Doyapore T. E. Garden Hospital, on 28-4-1957, with slight fever (99°F.) and vomiting, when a few roundworms came out with the vomit. She was given santonin and calomel, followed by a saline purge the next morning. Numerous roundworms were expelled for two to three days. The temperature was rising every day, especially in the evenings. There was some pain and tenderness over the right hypochondrium. She had been given a course of nivaquine, and then a course of achromycin for four days.

She had suffered from M.T. malaria the year before, and had suffered many times from dysentery.

On examination the child was not apparently healthy. The tongue was moist and coated. Glossitis was present. There was mild anaemia, but no jaundice. Heart and lungs did not reveal any abnormality. Abdomen was slightly distended, but there was no rigidity. The liver was not enlarged, but moderately tender on palpation. The spleen was not palpable.

Laboratory investigations :

16-5-57—*Blood* : R.B.C. 2·68 mill./c.mm.; Hb. 6·09 g. per cent (42 per cent); reticulocytes 0·6 per cent; W.B.C. 10,000/c.mm. with polymorphs 54 per cent, lymphocytes 40 per cent, monocytes 4 per cent and eosinophils 2 per cent.

17-5-57—*Urine* : Albumin, sugar, pus cells, casts and bile were absent. *Stool* : No sign of dysentery was present. A few roundworm ova were seen; no protozoal cysts were found.

18-5-57—*Stool* : No sign of dysentery was present; no helminthic ova, and protozoal cysts were present. Fat cells were plenty.

3-6-57—*Blood* : R.B.C. 2·61 mill./c.mm.; Hb. 6·67 g. per cent (46 per cent); reticulocytes 0·2 per cent; W.B.C. 10,600/c.mm. with polymorphs 54 per cent, lymphocytes 40 per cent, monocytes 2 per cent and eosinophils 4 per cent.

10-6-57—*Blood* : R.B.C. 2·4 mill./c.mm.; Hb. 5·68 g. per cent (39 per cent); reticulocytes 0·6 per cent; W.B.C. 10,930/c.mm. with polymorphs 55 per cent, lymphocytes 41 per cent, monocytes 3 per cent, and eosinophils 1 per cent.

21-6-57—*Blood* : R.B.C. 2·53 mill./c.mm.; Hb. 5·55 g. per cent (38 per cent); reticulocytes 0·4 per cent; W.B.C. 10,000/c.mm. with polymorphs 53 per cent, lymphocytes 35 per cent, monocytes 4 per cent and eosinophils 8 per cent. Widal test was negative in dilutions of 1/25 to 1/200. Aldehyde test was negative.

27-6-57—*Cerebrospinal fluid* : Clear; sugar present; globulin nil; no tubercle bacilli or other organisms seen.

29-6-57—*Blood for Weil Felix test*—negative in dilutions of 1/10 to 1/80.

2-7-57—*Blood* : R.B.C. 2·48 mill./c.mm.; Hb. 5·8 g. per cent (40 per cent); reticulocytes 0·6 per cent. *Stool* : No signs of dysentery seen; roundworm ova seen in moderate numbers; no protozoal cysts seen.

Fluoroscopy of the chest revealed no abnormality. Radiography on 17-5-57 showed a normal chest.

Treatment—The patient was put initially on a course of penicillin, which was changed to streptomycin and isonex on 22-5-57. This was continued for 20 days, with no result. A course of chloromycetin was started on 21-6-57. Emetine hydrochlor, 1/3 gr., was administered intramuscularly for 6 days. She died on 11th July, 1957.

Postmortem examination, done on 11-7-57, showed multiple abscess cavities in the liver substance, in each of which two or three roundworms—some dead, some still alive, were seen. A diagnosis of biliary ascariasis was made.

CASE 2 :

S.B., female, aged 20, of Majagram T.E., was admitted to the Labac Central Hospital on 21-4-58, suffering from abdominal pain and continuous fever of two weeks' duration. A month ago, the patient was seized with acute umbilical pain, associated with frequent vomiting and was admitted to the Majagram T.E. Garden Hospital. She was given magnesium trisilicate with tincture belladonna with no relief. The pain became more or less continuous, over the upper abdomen and umbilical region, and sometimes was referred to the right shoulder. Since the last 2 weeks, she had continuous fever. There was no cough. The bowels moved once or twice daily, and was rather loose.

On examination the patient did not look apparently healthy and was pale. The tongue was moist and coated. There was moderate anaemia, but no jaundice. The examination of the heart and lungs revealed normal heart sounds; dullness on percussion over the base of the right lung, with weak air entry and no adventitious sounds. Abdomen was distended but there was no rigidity. The spleen was not palpable. The liver, enlarged two fingers below costal margin and the whole of the liver was markedly tender. Caecum and sigmoid were palpable.

Fluoroscopy of the chest on 22-4-58 showed upward enlargement of the liver.

Laboratory investigations :

22-4-58—*Blood* : R.B.C. 2·61 mill./c.mm.; Hb. 6·67 g. per cent (46 per cent); reticulocytes 0·4 per cent; P.C.V. 23 per cent; M.C.V. 88 $c\mu$.; M.C.H. 26 $\mu\mu$g.; M.C.H.C. 29 g. per cent; W.B.C. 11,250/c.mm. with polymorphs 77 per cent, lymphocytes 16 per cent, monocytes 4 per cent and eosinophils 3 per cent. van den Bergh test—negative. Plasma protein 6·5 g. per cent. *Stool* : No signs of dysentery seen; a few roundworm ova detected; occult blood test—negative. *Urine* : straw yellow in

colour, acid in reaction with a specific gravity of 1010. Albumin, sugar, pus cells, casts and bile were absent.

25-4-58—*Blood* : Widal test was negative in all dilutions. W.B.C. 21,250/c.mm. with polymorphs 79 per cent, lymphocytes 17 per cent, monocytes 3 per cent and eosinophil 1 per cent. Van den Bergh test—immediate direct reaction. Serum for bilirubin test (Fauchet's test)—positive.

28-4-58—*Blood* : R.B.C. 2·65 mill./c.mm.; Hb. 6·09 g. per cent (42 per cent); reticulocytes 0·2 per cent; W.B.C. 35,625/c.mm. with polymorphs 84 per cent, lymphocytes 9 per cent, monocytes 3 per cent and normoblasts 4 per cent.

Pleural fluid : No tubercle bacilli seen. A few gram-negative bacilli and pus cells were seen.

Treatment—The patient was treated with alkaline mixture, one ounce t.i.d.; and emetine hydrochlor, gr. 1, I.M., daily. After 3 days, emetine injection was discontinued. She was then put on chloromycetin capsules, one every four hours.

Autopsy (done on 29-4-58) showed the liver to be enlarged with multiple abscess cavities in its substance, each cavity containing five to six roundworms, some alive, some dead and necrosed. One such abscess had burst into the peritoneal cavity, causing peritonitis. A few dead roundworms were found in the peritoneal cavity.

CASE 3 :

A.G., female child, aged 4½ years, of Koomber T.E. was admitted to the Labac Central Hospital on 14-10-59, for the investigation of irregular fever and malnutrition of 3 months' duration. Achromycin and chloromycetin had already been tried in the Garden Hospital, but with no effect. About three months ago, the child suffered from hectic type of fever, along with loose motions of the bowel. Quinine, sulphadiazine, streptomycin and other antibiotics had already been tried but with very little result. The child was gradually losing weight. Her bowels now moved once a day in a formed state. She had suffered from whooping cough in early infancy.

On examination the girl looked badly wasted, with a marked degree of anaemia. The tongue was coated and showed glossitis. There was no jaundice. The heart and lungs revealed no abnormality. Abdomen was rather distended. The liver was enlarged 1½ fingers below the costal margin. The spleen was not palpable. There was no localised lump or tenderness. Vulvovaginitis was present.

Laboratory Investigations :

15-10-59—*Blood* : R.B.C. 2·28 mill./c.mm.; Hb. 4·93 g. per cent (34 per cent); reticulocytes 0·4 per cent; W.B.C. 41,400/c.mm. with polymorphs 48 per cent, lymphocytes 30 per cent, monocytes 2 per cent and eosinophils 20 per cent. *Stool* : No signs of dysentery were seen. A few roundworm ova were found and there were no protozoal cysts.

20-10-59—*Urine* examination did not show any pus cells and on cultural examination *E. coli* was isolated.

23-10-59—*Blood* : R.B.C. 2·00 mill./c.mm.; Hb. 4·06 g. per cent (28 per cent); reticulocytes 0·8 per cent.

30-10-59—*Blood* : R.B.C. 1·63 mill./c.mm.; Hb. 4·06 g. per cent (28 per cent); reticulocytes 0·4 per cent.

10-11-59—*Blood* : R.B.C. 1·71 mill./c.mm.; Hb. 4·35 g. per cent (30 per cent); reticulocytes 0·4 per cent.

X-ray report—Radiography of the chest on 15-10-59, and fluoroscopy of the chest on 6-11-59 revealed no abnormality.

Treatment—The child was put on a course of achromycin, 100 mg., four times a day, and daily injection of imferon. There was some diminution in the fever, but this again rose. Liver extract 1 ml. was injected daily and streptomycin was started. There was no improvement in the symptoms and the child expired on 22-11-59.

Postmortem examination (performed on 22-11-59)—Liver was found to be moderately enlarged and firm, and showed multiple small abscess cavities which were full of roundworms, alive and dead (Figs. 1 and 2, *vide* Plate).

COMMENTS

Three cases of biliary ascariasis, confirmed by postmortem examination are presented in detail. Two patients were children and one a young adult. In all the cases, the main symptoms were irregular fever, upper abdominal pain, and progressive emaciation, and every patient gave a history of ascaris infection. One of the patients had jaundice. All the patients were investigated as cases of pyrexia of unknown origin, and several antibiotics were tried without any effect.

In areas where the incidence of roundworm infestation is high, the possibility of biliary ascariasis should be borne in mind.

In the words of Young (1958), "Next time a young, miltiparous female gives you a jaundiced look, complains of severe pain in her epigastrium, and wriggles her fingers at you, let your mind dwell awhile on her biliary system, and recall and contemplate upon the habits of the ubiquitous roundworm . . . ."

REFERENCES

MANG, A. C. C. AND WANG, A. T.—*Chinese M. J.*, **67** : 310, 1949.

MANSON-BAHR, P. H.—Manson's Tropical Diseases, 14th Edition, 1957, Cassel, London, p. 707.

YANG, S. C. H. AND LAUBE, P. J.—*Ann. Surg.*, **123** : 299, 1946.

YOUNG, G. B.—Presidential Address at the Annual General Meeting of the B.M.A., Assam Branch, 8th February, 1958.

YOUNG, G. B. AND BURTON, W. D. V.—*Ibid*, p. 7.

SERUM GLUTAMIC OXALACETIC TRANSAMINASE IN CLINICAL MEDICINE

A Preliminary Report

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In recent years there has been a great interest in the studies of various tissue enzymes and their liberation in serum and other body fluids. Of these glutamic oxalacetic transaminase (GOT) has been very widely studied because of its easy and accurate determination in serum and its wide distribution with a definite preponderance in certain organs.

Heart muscle and liver cells have been found to be particularly rich in this enzyme and very high serum glutamic oxalacetic transaminase (SGOT) levels have been reported in diseases involving the myocardium and the liver. Since the introduction of SGOT estimation in clinical medicine by La due *et al* (1954), it has gained an important place amongst useful diagnostic aids in various clinical states, particularly in :

1. Coronary artery disease, with or without myocardial infarction (Karmen *et al*, 1955 ; Meister, 1955 ; Umbreit *et al*, 1957 ; Berkmann and Bhargava, 1959).

2. Hepatocellular damage (Molander *et al*, 1956 ; Berkmann and Bhargava, 1959).

Making an early and precise diagnosis in patients suspected of coronary artery disease and a decision whether a definite infarction has occurred or not is of paramount importance in the treatment of such patients. The conventional diagnostic procedures have certainly proved extremely useful towards this end. Many advances have been made in the field of electrocardiography. Nevertheless there are still many fallacies and limitations. Bundle branch blocks, acute arrhythimias not uncommonly complicating a fresh cardiac strain of any kind and Q-waves due to previous infarction make it at times almost impossible for an electrocardiographer to give a definite opinion regarding the presence or absence of a fresh necrosis. Under these circumstances the physician is usually guided by his clinical impression aided by other fallacious tests like erythrocyte sedimentation rate and non-protein nitrogen retention. The results can be well guessed, and a reliable confirmatory test would, therefore, be most welcome. SGOT estimation has proved to be very promising in this respect.

In various types of liver injury there is a release of this enzyme from the cells with final elevation of serum level. The offending agent may be chemical in nature, e.g., carbon tetrachloride (Wroblewski, 1958) and chlorpromazine (Shay and Siplet, 1957). Consistently high SGOT levels have been reported in hepatitis and such high levels have been found to be persisting for variable periods depending on the continued injury in chronic hepatic infection.

SGOT levels in hepatic cirrhosis have been found to be very variable, ranging from normal to values up to 300 units, irrespective of routine liver function studies.

In these cases if it is reasonable to assume that SGOT values are indicative of the presence of active and continued parenchymatous injury a differentiation between deterioration in a case of cirrhosis due to further cellular damage and hepatic dysfunction due to progresive scarring may be more easily assessed.

Consideration of enzyme activity may often facilitate the differential diagnosis of 'surgical jaundice' from jaundice due to 'hepatocellular death'.

There may be many more situations when SGOT estimation may prove to be the deciding factor in the correct appraisal of the patient's disorder, when other diagnostic aids may be equivocal. With this background SGOT estimations on patients attending the Irwin Hospital with a wide variety of clinical conditions specially cardiac and liver diseases, have been undertaken in this laboratory.

During the last two decades it has nearly been established that all natural amino acids can participate in enzymic transamination reactions and it has also been found that a number of different transaminases are present in various plants and animal kingdom. It, is, therefore, essential not only to understand the mechanism of this transamination but also the development of a reliable method for the determination of transaminase activity by standardising the technique and isolation of a purified preparation of a transaminase which will aid in the evaluation of present investigation in terms of absolute units.

An exhaustive treatise was been written by Apsen and Meister (1958) and Meister (1955). Serum transaminase can be estimated by a large array of methods based on the determination of amino acids chromatographically, chemically, optically and microbiologically (the scope is limited).

Other methods are enzymic—evolution of CO_2 which is determined manometrically. Last but not the least important are the methods based on radioactive tracer techniques.

Method

Based upon the principles stated above and that described by Tonhazy *et al* (1950) and Umbreit *et al* (1957) a technique for the evaluation of serum transaminase was worked out (Table 1).

Reagents required for the test:

Standard pyruvate solution—Dissolve 25 mg. of sodium pyruvate of analytical quality in distilled water and make up the volume to 100 ml. This solution is equivalant to 40 μg. of pyruvic acid per 0·2 ml. Sodium pyruvate has been selected as standard solution instead of pyruvic acid which is difficult to get in pure state.

Reagent A (substrate)—Dissolve 2·66 g. of DL-aspartic acid, 2·06 g. of K_2HPO_4 and 0·6 g. of l-ketoglutaric acid in 100 ml. of distilled water and adjust to pH 7·4 with KOH solution. This solution should be kept in the ice chest.

Reagent B—100 g. of trichloracetic acid is added to 100 ml. of distilled water.

Reagent C (Aniline citrate)—To 5 g. of citric acid add 5 ml. of distilled water and when dissolved add 5 ml. aniline. This may crystallise some time and it should then be discarded.

Reagent D (Dinitrophenylhydrazine reagent)—To 100 mg. of 2-4 dinitrophenyl hydrazine dissolved in 20 ml. conc. HCl add 80 ml. distilled water. With the lapse of time, the reagent tends to give increasing colour in the blank. When these interfere with the test, fresh reagent should be prepared.

Reagent E (Water saturated toluene)—5 ml. of distilled water is shaken with 500 ml. of toluene.

Reagent F. (Alcoholic KOH solution)—2·5 g. of KOH is dissolved in 100 ml. of 95 per cent alcohol. This absorbes CO_2 from air and becomes turbid. The reagent should be protected from the action of CO_2 and when turbid, should be discarded and a fresh solution should be made.

10 per cent Na_2CO_3 solution—Dissolve 10 g. of anhydrous Na_2CO_3 in 100 ml. distilled water. (The quality of the chemicals used in the test only B.D.H.L.R. or Anlar. No. C.P. grade reagent was used).

Technique of the test:

The different steps in the test are detailed in Table 1.

Table 1—Showing the Steps of the Technique Followed

Reagents	Test	Standard	Blank
1. Serum	0·2 ml.	0·2 ml.	0·2 ml.
2. Distilled water ...	0·8 ml.	0·8 ml.	0·8 ml.
3. Reagent A	0·5 ml.	0·5 ml.	0·5 ml.
4. Standard pyruvate (incubate for 10 min. at 37°C)	0·0 ml.	0·2 ml. (40 μg) No incubation	0·0 ml. No incubation
5. Reagent B	1 drop	1 drop	1 drop
6. Reagent C	1 drop	1 drop (Add at once)	1 drop (Add at once)
Now shake thoroughly for mixing and allow to stand for 20 minutes			
7. Reagent D	0·5 ml.	0·5 ml.	0·5 ml.
Again shake and allow to stand for 5 minutes			
8. Reagent E	2 ml.	2 ml.	2 ml.
Finally shake and centrifuge hard to get a clear supernatant layer of toluene extract			
9. Toluene layer ...	1 ml.	1 ml.	1 ml.
10. 10% Na_2CO_3 ...	2 ml.	2 ml.	2 ml.
Now shake and centrifuge			
11. Na_2CO_3 layer ...	1 ml.	1 ml.	1 ml.
12. Add Reagent F ...	5 ml.	5 ml.	5 ml.
Finally shake and centrifuge			

Take the readings in a Klett Summerson colorimeter using blue filter and setting the colorimeter at O against blank.

Calculations:

$$\frac{\text{R Unknown}}{\text{R Standard}} \times \frac{1}{0{\cdot}475} \times \frac{40}{0{\cdot}2} = \text{Unit/ml.}$$

This method has the advantage that high purity of alcohol can be eliminated. Alcohol refluxed with NaOH for 8 hours and then distilled can be used. During our initial studies lot of difficulty was encountered for purification of alcohol, and when this procedure of converting the phenyl hydrazone to its sodium salt by treatment with 10 per cent Na_2CO_3 was adopted, satisfactory results were obtained.

Results

We have carried out the estimation of SGOT levels on 161 patients and the results have been presented in Table 2. It is obvious that the

TABLE 2—SHOWING THE RESULTS OF THE TEST

Clinical conditions	No. of cases	Range of SGOT level (units)
Infective hepatitis	25	50-612
Hepatic jaundice due to undetermined liver injury ...	15	50 320
Cirrhosis of liver	10	30-80
Coronary thrombosis	40	40-200
Pericarditis	2	30-40
Cor pulmonale	2	40
Mitral stenosis	2	7-25
Pleural effusion	2	10-20
Normals, i.e., patients not suffering from any wasting diseases, tumour, etc.	40	2-40
Salmonella endocarditis ...	1	68
Chronic heart failure	4	10-40
Splenomegaly	2	12-30
Acute rheumatic fever ...	1	93
Chronic rheumatic heart disease	2	50
$CuSO_4$ poisoning, acute ...	1	187
$CuSO_4$ poisoning, mild ...	2	19-21
Coronary insufficiency ...	4	30 60
Peritonitis with cirrhosis of the liver	1	80
Hepatorenal failure	1	30
Abdominal tumours	2	162
Crush injuries	2	80
Total	161	

number of cases presented here under each head is small and this study is being extended further to 500 patients.

SUMMARY

This paper describes a method of assay of the SGOT level in patients suffering from various derangements.

This is a preliminary report.

A brief resume of the literature on the SGOT levels is also presented.

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REFERENCES

ASPEN, A. J. AND MEISTER, A.—Methods of Biochemical Analysis, Vol. 6, 1958, Interscience, New York and London, pp. 131-161.

BERKMANN, F. AND BHARGAVA, A. N.—*Canad M. A. J.*, **80**: 861, 1950.

KARMEN, A., WROBLEWSKI, F. AND LA DUE, J. S.—*J. Clin. Invest.*, **34**: 126, 1955.

LA DUE, J. S., WROBLEWSKI, F. AND KARMEN, A.—*Science*, **120**: 497, 1954.

MEISTER, A.—Advances in Enzymology, Vol. 16, 1955, Interscience, New York and London, pp. 185-246.

MOLANDER, D. W., WROBLEWSKI, F. AND LA DUE, J. S.—*J. Lab. & Clin. Med.*, **46**: 831, 1956.

SHAY, H. AND SIPLET, H.—*Gastroenterology*, **32**: 571, 1957.

TONHAZY, N. H., WHITE, N. G. AND UMBREIT, W. W.—*Arch. Biochem.*, **28**: 36, 1950.

UMBREIT, W. W., RAHWAY, N. J., KINGSLEY, C. R., SCHAFFERT, R. R. AND SILPET, A. B.—*J. Lab. & Clin. Med.*, **49**: 454, 1957.

WROBLEWSKI, F.— *Advance in Clin. Chem.*, **1**: 313, 1958.

PRACTITIONERS' SERIES

DYSMENORRHOEA

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INTRODUCTION

The aetiology of different forms of dysmenorrhoea remains obscure. The prognosis has become all the more uncertain with the increase in the number of therapeutic methods. Treatment of this condition is almost legion and ranges from psychotherapy to panhysterectomy. Besides, classification and definitions of different clinical groups are a matter of confusion. We have, therefore, tried to simplify the subject in such a manner as will sustain the interest of modern clinicians.

It is necessary to distinguish dysmenorrhoea from another condition known as molimen, in which there is some amount of discomfort, pain, lassitude, anorexia, transient oedema of the lower extremities and even sickness for a day or two before or during menstruation, but not of a severity to make her bed-ridden. On the other hand, dysmenorrhoea is a symptom-complex occurring at the time of menstruation, and characterised by lower abdominal pain of sufficient severity to keep the individual in bed for at least 12-40 hours.

The pain of dysmenorrhoea is usually colicky in type and coincides with the contraction of the uterus. When felt chiefly in the mid-hypogastrium, it is perhaps due to ischaemic uterine contractions, or due to a state of hypertonus and ischaemia in between the uterine contractions.

When the pain is felt also in the iliac fossae, it may be due to ischaemic contractions of the tubes. Sometimes the pain may radiate towards the back. This is probably due to retroversion of the uterus with adhesions posteriorly in the pouch of Douglas. Pain in dysmenorrhoea is therefore the result of uterine as well as tubal contractions. In a previous communication on contraction of the human fallopain tubes we have shown that the uterine musculature and the tubal musculature behave in a similar way.

It has been suggested that the pain is due to tension in the cervix as a result of salt and water retention associated with an actively functioning corpus luteum. In support of this we have in our mind two cases of subtotal hysterectomy where cyclic pain could be attributed to the persistent corpus luteum in the conserved ovaries. In both the cases ovarian endometriosis was suspected before laparotomy. Wedge resections of ovaries were performed and the patients have remained free from symptoms for more than six years.

It has also been shown that the cervix plays an important role in the initiation of pain in dysmenorrhoea, for example by reproducing pain by dilatation of the cervix, even after subtotal hysterectomy.

In most textbooks on gynaecology, dysmenorrhoea has been classified as primary and secondary. This classification is often very confusing and has a limited practical utility. We have adopted a modified classification which strikes at the aetiological factor, as well as guides us towards the line of treatment to be adopted. It is quick, convenient and simple in studying the problem of dysmenorrhoea.

Types of Dysmenorrhoea and their Treatments

The different types of dysmenorrhoea and their treatments are considered under the heads, psychogenic, neurogenic, muscular, vascular, endocrinal, general and allergic.

I. PSYCHOGENIC TYPE :

A fair percentage of dysmenorrhoeic patients have a lowered pain threshold. Further, they do not accept menstruation as a normal or physiological process. We should not lay undue stress on the psychogenic factor until the true aetiology is found. The premenstrual fluid retention may cause oedema and ischaemia of the cerebral cortex, which in turn may lower the pain threshold and result in the patient recognising the pain in the area of pelvic congestion.

Treatment consists of re-assurance to the patient. A few tablets or injections may have the role more of psychotherapy than drug therapy. A few patients who had the misfortune to undergo repeated cervical dilatations and even pelvic sympathectomy, could be cured by suggestion and reassurance alone at a later date.

A persistent corpus luteum which did not cease functioning from one period to another might have been at the root of the trouble. Gradually as organic causes of dysmenorrhoea are revealed, this group of cases are dwindling in number.

II. NEUROGENIC TYPE :

An imbalance of the autonomic nervous system is responsible for this group of cases. The sympathetic supply to the uterus is from the Lee-Frankenhauser plexus through the paracervical ganglia. The pain is due to sympathetic stimulation which causes irregular muscular contractions of the uterus and spasm of the internal and external os uteri. The pain is often relieved after dilatation of the cervical canal and also after childbirth, due to destruction of the sympathetic supply in the region of the cervix. Inflammation of the nerve fibres may give rise to painful pressure on the nerve endings when the uterus contracts to express out the clots.

Treatment is considered under two heads, medical and surgical :

(1) Medical—Antibiotics, hot fomentation, ultra short-wave therapy.

(2) Surgical—(i) Dilatation of the cervix causing laceration of the nerve fibres, which thereafter do not regenerate for a period of 6 months to 2 years.

(ii) Electrocauterisation of the cervix, when there is a chronic infection of the cervix. Apart from providing drainage and subsequent regeneration of healthy tissue this procedure also destroys the inflamed nerve fibres in the region of the external os uteri.

(iii) Injection of proctocaine into the cervical ganglia and the uterosacral ligaments.

(iv) Pelvic sympathectomy—Cottes' and Davis' operation.

III. VASCULAR TYPE (ABNORMALITY OF THE UTERINE MUSCULATURE) :

When a hollow viscus contracts, its sphincter must relax. If this polarity is not maintained, there is irregular and erratic contraction. In a hypoplastic uterus, the fibrous tissue preponderates over the muscle tissue. As a result, the muscle

force is poor and the uterus contracts in a crampy way, or the poor muscle force leads to accumulation of menstrual discharge causing distension of the uterus and pain. Furthermore, the uterine veins cannot be emptied completely and the resulting venous stasis during menstruation causes pressure irritation of the uterine nerve-endings and pain. As a general rule, hypoplasia of the uterus is a rare cause of dysmenorrhoea. Abnormality of muscular action seems to be related to the endocrinal status of the individual.

Cyclic therapy with oestrogen and progesterone is necessary for the growth of the uterus and seems to yield results in treatment of dysmenorrhoea in this type of cases. In recent years we have been injecting in the substance of the cervix uteri oestrogen-progesterone combination preparations in the hypoplastic and even the cochleate type of uterus and have been satisfied with the response.

IV VASCULAR TYPE :

This is the most interesting phenomenon and is easily recognisable as (1) congestive type, and (2) ischaemic type. The causative factors are diverse. The paradoxical situation is better appreciated than described, with the occurrence of pain in both blushing and blanching of the uterus.

Congestive type—This is associated with infection, endometriosis, retroversion of the uterus, and most important of all with salt and water retention due to sex hormones. The pain is both premenstrual and menstrual. It is specially severe on the 3rd and 4th day when the passage of clots is a prominent feature. The menstrual flow is profuse and may be prolonged. The vascular engorgement of the menstruating uterus superimposed upon the underlying pelvic congestion probably compresses the sympathetic nerve-endings leading to pain.

Treatment is easy when the gross pathology is obvious. Neoplasms and pelvic inflammatory disease are best tackled by radical or conservative surgery according to the requirements of the individual in respect of child-bearing and conservation of menstrual function. Cases of dysmenorrhoea resulting from salt and water retention due to endocrinal imbalance are more difficult to treat and should be dealt with subsequently.

Ichaemic type—It is possible that contractions of the uterine muscle in the luteal phase of the cycle may be so forceful as to produce uterine ischaemia and pain. The pain may commence a few hours before the menstrual flow and continue throughout the first day. It is very intense and incapacitating in character, and is seldom relieved even by antispasmodics. Perhaps the anoxaemia resulting from the constriction of the spinal arterioles in the basal zone, renders the nerve endings unduly sensitive.

The factor causing vasoconstriction is not known, but it is suggested that it may be a product or toxin of the disintegrated endometrium.

In view of the positive evidence of progesterone producing ischaemic uterine contractions, anovulatory cycles have been induced by oestrogen or androgen. Ethinyl oestradiol has been extensively used over a number of consecutive cycles by numerous workers with claims of success.

Oestrogen acts in three ways :

(i) By its anti-progesterone property. This view is obviously untenable.

(ii) Through the anterior pituitary—depressing the A.P. and thus preventing ovulation and corpus luteum formation, and therefore there is no production of progesterone.

(iii) It is said that the oestrogenic hormone contains a vasodilating factor.

The views expressed in (ii) and (iii) would be most acceptable.

The role of androgens in the relief of pain is unquestionable on the results of clinical trials. Its mode of action is a debatable point. For producing anovulatory cycles we may have to use virilising dosage. We have used androgen in much smaller dosage and have felt happy at the response. It appears to us that androgens work by a 'pituitary release' phenomenon.

Administration of androgen spares the anterior pituitary's function of stimulating the suprarenal to produce endogenous androgen. As a result, the A.P. is released to produce F.S.H. and L.H. and therefore of oestrogen and progesterone in balanced proportions.

Androgen thus tends to restore the polarity of the uterus and produces normal uterine contractions rather than erratic ones. As the blood supply of the uterus is better regulated, a soothing action on uterine musculature is produced.

V. ENDOCRINAL TYPE :

The role of progesterone in causing ischaemic pain has already been mentioned. Our purpose here is to further draw attention to the production of dysmenorrhoea associated with the expulsion of membranous casts. Observations on some cases of membranous casts have revealed increased proliferative as well as secretory activity of the endometrium. It is our belief that there is complete loss of balance between oestrogen, progesterone, androgen F.S.H. and L.H. at the end of the menstrual cycle resulting in inefficient disintegration of

the endometrial bed. In a case of this type we had occasion to perform laparotomy, and found retained corpus luteum. Obviously, this lends support to our view on disturbed functions of anterior pituitary and ovary. The cause of membranous dysmenorrhoea is still disputed. Some authors believe that it is due to an underdeveloped uterus, or to a deficiency of fibrinolytic enzymes which dissolve the clotted blood in the uterus. Others believe that on overmature corpus luteum induces excessive decidual reaction which makes the surface endometrium so compact that it cannot easily disintegrate.

Thus the importance of endocrines in the causation and management of dysmenorrhoea is obvious.

VI. GENERAL TYPE :

These include weak constitution, poor health, poor nutrition, physical and mental exhaustion, faulty posture, constipation, bowel infestations, intestinal spasm, chronic muscular or ligamentary strain. These lead to under-development of the whole system including the endocrinal system. The maximum number of cases of dysmenorrhoea that we come across in clinical practice belong to this group.

The general rule in treatment of these cases is to administer antispasmodics and sedatives to tide over the immediate crisis, while the general health is being built up with balanced diet, exercise, and suitable drugs.

VII. ALLERGIC TYPE :

The smooth muscle of the uterus, which is most sensitive during menstruation, may react to an allergen, like the bronchial muscle in asthma, by going into spasm. The occurrence of urticaria, migraine and shock at the time of menstruation points to an allergic factor.

It has been postulated that the allergen may be a toxin or a product of the disintegrating endometrium, or the dysmenorrhoea may be ascribed to dietetic idiosyncrasy or disturbance of metabolism. There is very little evidence to support the view of the allergic factor.

We have attempted to approach the problem of dysmenorrhoea in a more practical way—in a manner in which the clinician is confronted with it. The primary aim of the clinician being to effect relief, the suggested modification of grouping simplifies the subject from that angle.

CASE NOTE

PHAEOCHROMOCYTOMA

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Phaeochromocytoma is regarded as a cause, although a rare one, of hypertension. Although phaeochromocytoma causes paroxysmal hypertension in some cases, it may cause persistent hypertension in many more cases. Paroxysmal hypertension may ultimately lead to persistent hypertension which may later give rise to malignant hypertension in a few cases. As surgical removal of phaeochromocytoma may lead to complete cure of the patient, its diagnosis has become of great significance to the physician and the surgeon alike.

Phaeochromocytoma is a tumour arising from the chromaffin cells of the adrenal medulla, and also from aberrant chromaffin cells in para-aortic, thoracic and cervical regions. It secretes adrenaline and noradrenaline in varying proportions—adrenaline predominating in one group and noradrenaline in the other. There is a difference between the action of adrenaline and noradrenaline. The former gives rise to peripheral vasoconstriction, great rise of systolic pressure and less rise of diastolic pressure, marked increase of pulse rate and irregular rhythm; noradrenaline, on the other hand, gives rise to more peripheral vascular resistance, rise of both systolic and diastolic pressure and slowing of the pulse rate. Noradrenaline has got less glycogenolytic action than adrenaline.

The usual age of onset of medullary tumour is between 20-50 years and in about 8 per cent it is malignant. But such tumours rarely metastasise. The tumour is generally dark brown in colour, and usually small in size but occasionally it may attain a great size, even up to 2,000 g. (Boyd, 1958). It is usually unilateral, but may be bilateral in 10 per cent of cases. Microscopically, it is composed of large polymorphous cells which stain yellow with salts of chromic acid.

Clinical features—As already stated, a small percentage of cases of phaeochromocytoma presents the clinical picture of paroxysmal hypertension, pallor, perspiration, nausea, vomiting, agonising headache, anxiety and apprehension of death.

The systolic blood pressure may rise to very high level even 250-300 mm. Hg and there may be left ventricular failure with cardiac asthma. The paroxysm lasts for a short time varying from a few minutes to a few hours, after which the patient is left in a state of extreme exhaustion. But in the majority of cases there is a persistent hypertension simulating the type of essential or renal hypertension. It is in these groups of

cases that a diagnosis is likely to be missed, unless the possibility of phaeochromocytoma is kept in mind. Death may result from cerebral haemorrhage, acute pulmonary oedema or ventricular fibrillation.

Diagnosis—The diagnosis is not difficult, if the possibility of phaeochromocytoma is borne in mind and necessary investigations are performed as a routine in all cases of hypertension. Tomography, intravenous pyelography, and perirenal insufflation may give valuable help. The last procedure is not advocated by some authors, as it may precipitate a severe hypertensive attack. The manipulations in the lumbar area may precipitate an attack and this technique as a diagnostic measure is not advocated as it may lead to death, and moreover often it is not successful. Intravenous injection of 0·025 mg. of histamine diphosphate in 2·5 ml. of normal saline which will cause an enormous rise of blood pressure, sometimes giving rise to hypertensive crisis, is now-a-days discarded, because of its obvious risks. Adrenergic blocking substances, e.g., piperoxan, dibenamine and phentolamine (regitin) are used for diagnostic purpose and of these regitin is commonly used. Phentolamine 0·08 mg./kg. of body weight when injected, produces a rapid fall of blood pressure which lasts for a few hours. Lastly the estimation of plasma adrenaline and noradrenaline or the output of the catecholamine in the urine gives the most reliable test for phaeochromocytoma. In a normal subject with rest in bed only about 5 μg. of adrenaline and 20-40 μg. of noradrenaline are excreted in the urine in 24 hours. In cases of phaeochromocytoma even 100 times of this quantity is excreted in 24 hours.

Review of the literature—The exact incidence of phaeochromocytoma is unknown. An estimate based upon surgically explored hypertensive patients is 0·74 per cent (Orgain, 1955). Although many cases have been reported from other countries, we find that very few cases have been reported from India. Shah and Vakil (1954) recorded one case of phaeochromocytoma in a female aged 41. They claimed that this was the first case reported in India. They have also reviewed the world literature and collected 300 cases. Basu (1955) reported one case of phaeochromocytoma in a male aged 50. Tevetaglu (1956) described a case of phaeochromocytoma in an eight year old boy presenting features of diabetes insipidus and discussed 47 cases occurring in children under 16 years from the world literature. Spencer *et al* (1956) recorded a case of phaeochromocytoma in a girl aged 7. Kelsall and Ross (1955) reported bilateral phaeochromocytoma in two sisters and discussed the familial incidence of this disease. Davis *et al* (1956) reported a malignant case of phaeochromocytoma and discussed the importance of repeated estimations of urinary catecholamine in postoperative follow-up to eliminate the possibility of malignant metastasis elsewhere or the presence of a second phaeochromocytoma in some other site. Paulshock and Miller (1956) reported a case of unsuspected phaeochromocytoma resulting in postoperative death and justly remarked that phaeochromocytoma may be the cause of sudden death during or immediately after and unrelated to surgery.

Case Report

A male patient, aged about 45, was admitted in the hospital on 26-1-1960 as a case of cardiac asthma. He complained of exertional dyspnoea for the last one month. The dyspnoea was present even when the patient was at rest. The patient stated that he had cough with slight expectoration and constant headache and palpitation for the last one month. He gave a history of similar attack one year back lasting for about two months. The family history revealed nothing significant.

EXAMINATION :

On examination, the patient was dyspnoeic, of good nutrition and average build ; there was no anaemia ; the pulse was 120/min. and regular ; respiration was 32/min., B.P. 180/120 mm. Hg. ; there was pitting oedema of the leg ; neck veins were engorged with no pulsation in the neck, and no enlargement of the neck glands. In the cardiovascular system the apex beat was in the left 6th intercostal space, $\frac{1}{2}''$ outside the midclavicular line and heaving in character ; the mitral 1st sound was loud, the aortic and pulmonary 2nd sounds were accentuated with a soft systolic murmur in the mitral area. Lungs showed plenty of rales over the bases and a few rhonchi. In the abdomen, the liver was enlarged about 2 fingers below costal margin, soft, tender and smooth ; but the spleen was not palpable ; there was no ascites nor was there any other abnormality in the abdomen.

INVESTIGATIONS :

Blood : Haemoglobin 76 per cent ; W.B.C. 9,200/c.mm. with polymorphs 76 per cent, lymphocytes 22 per cent and eosinophils 2 per cent.

Urine and stool examinations showed nothing abnormal.

Blood chemistry : Sugar (fasting) 168 mg. per cent ; urea 52 mg. per cent ; N.P.N. 39·2 mg. per cent ; total protein 7·81 g. per cent ; albumin 4·31 g. per cent ; globulin 3·50 g. per cent ; cholesterol 222 mg. per cent.

Van den Bergh test—Delayed direct reaction ; bilirubin 0·5 mg. per cent ; icteric index 7.

Straight x-ray of heart : Transverse diameter of the heart enlarged ; the cardiac configuration fitted in with hypertensive heart ; unfolding of the aorta present.

E.C.G. could not be taken.

CLINICAL DIAGNOSIS :

Clinically, the case was diagnosed as one of hypertensive congestive cardiac failure and was treated in the same line. On 1-2-60 at about 6 P.M., the patient felt slight precordial discomfort.

On 2-2-60 at bout 11 A.M. the patient complained of severe pain over the precordium and became restless. There were menifestations of shock, the pulse became very feeble, the blood pressure could not be recorded and the patient expired within 5-10 minutes. During the last week of his life, the systolic blood pressure varied from 170 to 190 mm. Hg, and diastolic 120 to 130 mm. Hg.

AUTOPSY REPORT :

Autopsy was done on 9-2-60. The body was kept in cold chamber. The heart (Fig. 1, *vide* Plate) was enlarged and weighed 570 g. ; the cavity was dilated ; the left ventricular wall was very much thickened, the valves were healthy ; the coronary openings were patent and admitted probe for several cm. No sign of infarction could be detected ; the pericardium was healthy ; the coronary arteries were atheromatous ; the right ventricle contained some amount of blood and blood clots and the left ventricle and auricle were empty.

Peritoneal cavity—No fluid.

Liver enlarged ; weight 1500 g., surface smooth and cut section showed a mottled appearance with dilated hepatic veins.

Kidneys—no gross abnormality was seen ; moderately firm in consistency ; capsule not adherent and easily peeled off ; renal parenchyma red in colour.

Left suprarenal gland was grossly enlarged and globular in appearance ; it was well capsulated ; weight 400 g., length 7 cm., breadth 6·5 cm. (Fig. 2, *vide* Plate). The cut section was moist and brown in appearance.

Right suprarenal gland—normal.

The brain and meninges—normal.

HISTOLOGY :

1. Lungs—congested pulmonary capillaries.
2. Liver—dilatation of sinusoids and central veins.
3. Kidneys—elastosis of renal arteries.
4. Phaeochromocytoma—sheets of polyhedral cells, separated by fibrous stroma ; areas of necrosis and degeneration present ; some giant cells were visible. The cells gave a positive chromaffin reaction (Fig. 3, *vide* Plate).

ANATOMICAL DIAGNOSIS :

1. Hypertrophy of left ventricle.
2. Early nephrosclerotic changes in the kidneys.
3. Atheromatous coronary artery.
4. Pheochromocytoma arising from left suprarenal gland.

Discussion

From the history and clinical examination of the patient we did not suspect that it was a case of phaeochromocytoma. The dead body being unclaimed, an autopsy was done, which revealed the real nature of the disease. Otherwise the cause of death would have been labelled as hypertensive congestive cardiac failure complicating essential hypertension. The patient was in a very precarious condition and died on the 7th day of admission. For the sake of argument even if we had suspected it to be a case of phaeochromocytoma, necessary investigations leading to proper diagnosis could not have been possible in view of the extreme gravity of the patient's condition.

According to the patient's history he had a similar attack about a year ago prior to his admission in this hospital. Had this condition been suspected at that time his life could have been saved by surgical interference.

It is a pointer to us that all cases of so-called essential hypertension should be thoroughly scrutinised for proper diagnosis as to the pathogenesis of hypertension including various tests for the detection of phaeochromocytoma. The data relating to the incidence of phaeochromocytoma in India seems to be very meagre. This is due to the fact that we are not at all conscious about the possibility of phaeochromocytoma in the background of so-called essential hypertension.

Summary

The pathology, the clinical features and the various tests leading to the diagnosis of phaeochromocytoma have been described. The literature has been reviewed. A case is here recorded where diagnosis was made postmortem.

Acknowledgment

Thanks are due to Prof. K. C. Basu Mallick, Department of Pathology for his valuable help and suggestions. We also thank Dr. R. N. Guha Majumder, Principal and Superintendent, Nilratan Sircar Medical College and Hospital, for permission to report the case.

References

BASU, A. K.—*Indian Heart J.*, **7** : 115, 1955.

BOYD, WILLIAM—Pathology for the Physician, Sixth Edition, 1958, Lea & Febiger, Philadelphia, p. 506.

DAVIS, P., PEURT, W. S. AND VAN HOFF, W.—*Lancet*, **2** : 274, 1955.

KELSALL, A. R. AND ROSS, E. R.—*Ibid*, **2** : 272, 1955.

ORGAIN, E. S.—*Ann. Int. Med.*, **43** : 1178, 1955.

PAULSHOCK, B. Z. AND MILLER, E. Z.—*Ibid*, **44** : 573, 1956.

SHAH, M. J. AND VAKIL, B. J.—*J. Indian M. A.*, **24** : 121, 1954.

SPENCER, B. J., WYATT, O. S. AND CHASHOLM, T. C.—*Minnesota M. J.*, **39** : 220, 1956.

TEVETOGLU, F.—*A. M. A. J. Dis. Child.*, **91** : 365, 1956.

JOURNAL OF THE
INDIAN MEDICAL ASSOCIATION

CALCUTTA, JANUARY 16, 1961

ANTENATAL CARE

During the last few decades widespread appreciation and practice of antenatal care in advanced countries have resulted in remarkable reduction of the risks during pregnancy and parturition both to the mother and the baby. In India there are now some centres providing fairly good antenatal care, but in most others there is either a complete lack of antenatal care or just a casual observation of pregnant women. Leaving aside the question of antenatal care in rural areas where it is yet to be introduced and urgently too, let us consider its present position in city clinics and how it can be improved. Even in some of the best clinics in the cities there are no arrangements for routine testing of blood of pregnant women, for Kahn test, and for Rh-Factor. The proportion of Rh-negative persons in India is sufficient to demand care that is needed in connection with blood transfusions and pregnancies. Our antenatal clinics should have arrangements for examining the blood of each pregnant woman for anaemia, Kahn test and Rh factor. Large scale examinations by well trained technicians under proper supervision will bring down the cost of these tests. With regular observation of the body weight and blood pressure changes throughout pregnancy the earliest signs of toxaemia can be detected, and with suitable treatment the development of eclamptic fits can be prevented altogether.

A number of women die every year from severe anaemia during pregnancy and labour. Anaemia in pregnancy is mostly secondary to chronic malaria or ankylostomiasis, conditions which can be easily diagnosed by routine stool examination.

All cases of antepartum haemorrhage should be admitted for treatment in a fully-equipped institution under the care of an experienced obstetrician. These cases should not be treated in a small ill-equipped or under-staffed institution.

Where the clinical examination indicates a discrepancy in the duration of amenorrhoea and the size of the uterus, a skiagram must be taken to eliminate any abnormality. Otherwise many cases of vesicular mole, twins, severe hydramnios, etc., will be missed, resulting in increased risk to the mother and the baby.

Many malpresentations can be corrected under proper antenatal care. During such routine antenatal care, after the 28th week, each time that a malpresentation is detected, the obstetrician should correct it gently, and in many cases a vertex delivery is secured with no risk to the patient or the foetus.

In many cases pregnant women do not get proper nutrition, at times from ignorance, but more often for economic reasons. In all such cases substantial help from the community should be organised for the success of the antenatal care programme. The role of the general practitioner in this work is very important.

When a comprehensive programme of antenatal care is first started in this country, there is often felt a feeling of despondency and a sense of futility among the organisers for the lack of appreciation and response from expectant mothers. To remedy this there should develop between the attending obstetrician and the expectant mother under his care a mutual feeling of confidence and regard. The clinic should have an atmosphere of privacy and decency, and there should be no show of rush and haste to go through the chores of the day. The visiting hour should also take into account the needs of the housewives who often have to look after other young children and have also to get food ready for the family.

A persistent effort should be made to understand the difficulties of the expectant mothers, but there should be no yielding or vacillation in demanding their complete obedience to the instructions give by the obstetrician. For these and other reasons a preliminary and simultaneous work by trained social workers among expectant mothers is of great help and should form an essential part of any comprehensive programme of antenatal care.

GIFT TO THE JOURNAL LIBRARY

We gratefully acknowledge the gift by Dr. J. N. Madan, F.R.C.S. (Eng.) of Begum Bagh, Meerut, of his ten-year collection of the British Medical Journal to the Library of the Journal of the Indian Medical Association.—ED., J. Indian M. A.

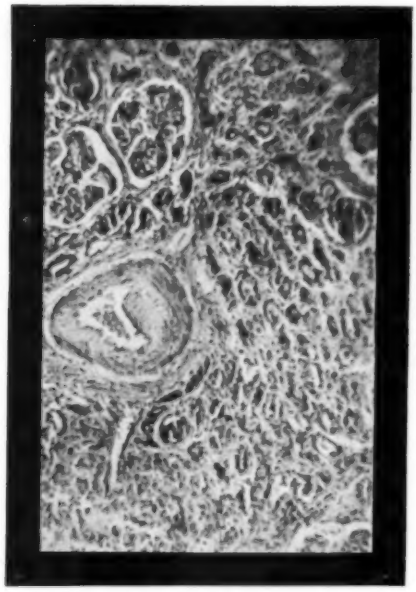

Fig. 1—Photomicrograph showing marked hyperplasia of intima of the vessel—grade II vascular abnormality. Glomeruli and tubules are normal. (× 120)

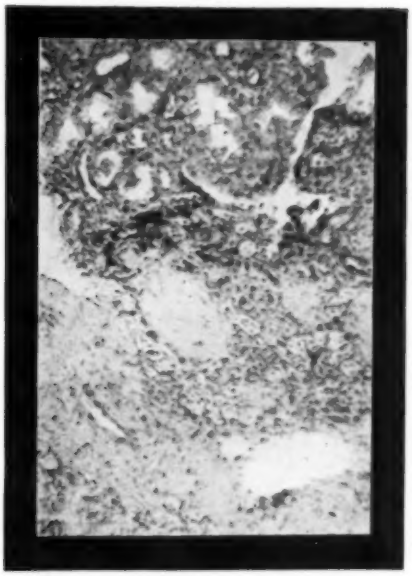

Fig. 2—Photomicrograph showing two blood vessels with severe intimal hyperplasia—grade III vascular abnormality. There is seen a dilated tubule. (× 120)

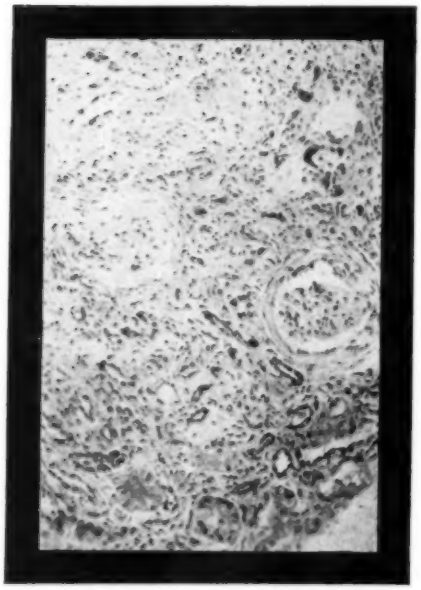

Fig. 3—Photomicrograph showing periglomerular fibrosis and increase in interstitial tissue. (× 120)

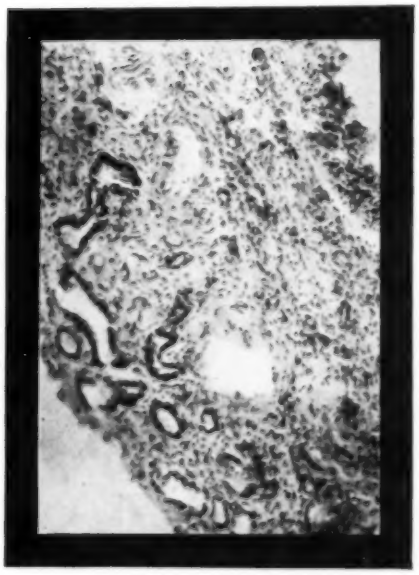

Fig. 4—Photomicrograph showing marked increase of interstitial tissue, and cellular infiltration. (× 120)

Fig. 1—Undersurface of the liver (Case 3) showing roundworms nearly occluding the common bile duct.

Fig. 2—Cut section of the liver (Case 3) showing roundworms in the dilated bile ducts and in abscess cavities.

MISRA—*Biliary Ascariasis* (p. 49)

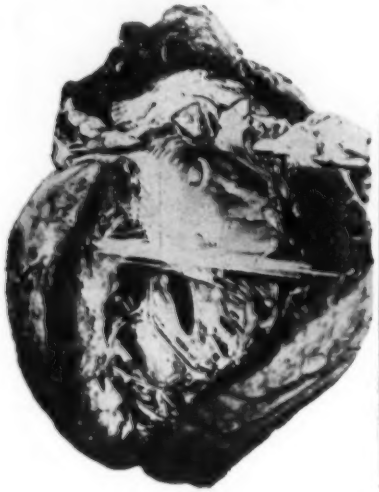

Fig. 1—Showing marked hypertrophy of left ventricle.

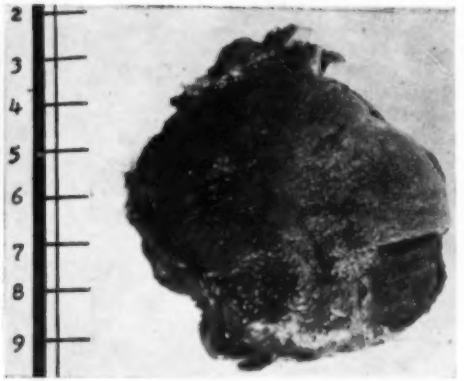

Fig. 2—Showing cut section of phaeochromocytoma. The scale represents measure in cm.

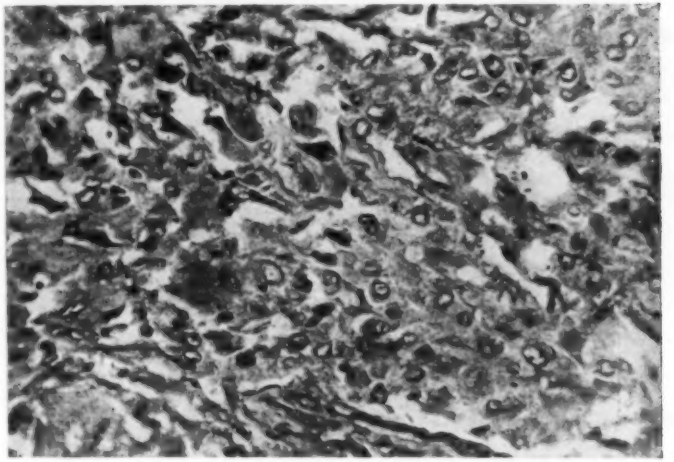

Fig. 3—Showing photomicrograph of phaeochromocytoma.

ROY *et al*—*Phaeochromocytoma* (p. 57)

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GENERAL PRACTICE DIGEST

MANAGEMENT OF DYSFUNCTIONAL UTERINE BLEEDING

The immediate aim of treatment should be to control the irregular bleeding when it is excessive. Thereafter, measures should be adopted not only to prevent its recurrence, but also to establish a normal menstrual rhythm. Unsatisfactory results are due often to inadequate treatment or lack of treatment after the initial control of the bleeding. It has been observed that dysfunctional bleeding is more commonly associated with anovulatory than with ovulatory cycles.

Dysfunctional bleeding in the under twenty age group is more readily controlled. Its occurrence at or soon after the menarche, unless the bleeding is excessive, is an indication for general treatment, such as a balanced diet, some restriction of physical activities, more adequate rest, and administration of iron and thyroid. If the dysfunction persists in spite of the above measures, or is causing inconvenience to the patient or anxiety to the parents, then hormone therapy should be started. Satisfactory results usually follow combined oestrogen and progestogen, or progestogen therapy alone.

On account of their side effects the androgens are contra-indicated. The chorionic gonadotrophins are generally of no use. Moderate dosage of oestrogen given daily for 24 days, with the addition of progestogen daily for the last 10 days, and maintained clinically over 3 to 4 months, with interval of 4 days between each course of treatment, is usually effective. Such treatment controls the irregularity, inhibits temporarily the activity of the pituitary and ovaries, and promotes establishment of a normal pituitary-ovarian mechanism. This treatment is also effective in regulating the menstrual cycle in young girls with irregular and frequent menstruation.

When the initial bleeding is severe, one of the three lines of treatment may be followed:

1. Ethinyl oestradiol 0·05 mg., twice or thrice daily or hourly if necessary until the bleeding is controlled.
2. Progestogen (one of the 19-norprogestational compounds) in doses of 5 mg. three or four times daily will control the bleeding within 24 to 48 hours.
3. Curettage of the uterus—This is an effective and rapid method of controlling the bleeding. It should be carried out in all cases where the diagnosis is in doubt.

When bleeding has been controlled by hormone therapy, the initial daily dosage should be continued for 24 days, and in the case of oestrogens, should be supplemented by a 19-norprogestational compound, 5 mg., thrice daily during the last 10 days.

This addition of progestogen promotes progestational phase in the endometrium and the bleeding which occurs within 4 days of cessation of treatment, is associated with a secretory endometrium.

The combined oestrogen and progestogen therapy should be maintained over 3 or 4 cycles, but the dosage of oestrogen should be limited to 0·05 mg. ethinyl oestradial once or twice daily for 24 days, but the initial dosage of the 19-norprogestational compound should be continued for 10 days. Bleeding generally follows within 4 days of cessation of treatment. This is associated with a secretory endometrium. The treatment should be maintained over 3 or 4 cycles, but in the case of progestogen, the same dosage of hormone is given only from the 15th to the 24th day of the cycle—counting the first day of the bleeding as day one.

The therapeutic effect of curettage should be anticipated in all cases, but recurrence of the abnormal bleeding indicates therapy with progestogen alone or combined oestrogen-progestogen. Relapse is not common in this age group.

In the twenty to forty age group, the etiology of the dysfunction is probably different. Emotional and psychosomatic disturbances play an important part. A detailed examination of the patient under anaesthesia with a curettage of the uterus is essential for excluding pelvic pathology, complications of pregnancy and for correct assessment of the type of dysfunctional bleeding. It should be remembered that in this age group abnormal bleeding, particularly as menorrhagia, is not uncommon in psychiatric disorders, blood dyscrasias and other systemic disturbances. These conditions should be appropriately treated.

In the absence of systemic disease and pelvic pathology, the treatment of menorrhagia becomes difficult. Younger patients need rest, restriction of physical activities and more regulated life. Sometimes short-wave diathermy proves efficacious and ergometrine may have palliative effect. Curettage of uterus may prove beneficial. Androgen therapy can control menorrhagia but it produces undesirable effects. Progestogen (19 norprogestational compounds) given over prolonged period may prove effective.

Radical treatment should be considered in hopeless cases only. This includes induction of an artificial menopause by whatever means. This form of treatment is not recommended before the age of thirty-eight.

Anovulatory dysfunctional bleeding in this age group is more readily controlled. General medical measures should be instituted initially. Curettage is necessary for diagnosis and frequently this has a therapeutic effect. Recurrence of abnormal bleeding indicates progestogen therapy. Administration of 15 to 20 mg. daily of a 19-norprogestational compound will control the bleeding within 24 to 48 hours. This dosage should be continued for 10 days. Within 3 to 4 days 'progestogen withdrawal bleeding' will occur—this will not be profuse and will last 4 to 5 days. Thereafter 15 to 20 mg. of the 19-progestational compound should be given daily from the 15th to the 24th day of the cycle and continued over at least 3 to 4 cycles.

The above treatment is frequently curative and is followed by a normal ovulatory cycle. Relapses may occur, particularly in the unmarried girl and further treatment is indicated. Pregnancy generally ensures a lasting curative effect.

A few cases do not respond to hormone therapy. Such cases require induction of an artificial menopause, especially when the patient is near the age of forty.

In the over forty age group, curettage is always indicated. There is no indication whatsoever for hormone therapy without a prior curettage. Curettage alone may be curative and is followed by a normal menopause, particularly in patients over the age of forty-five. When the irregular bleeding recurs after curettage or repeated curettage, artificial menopause should be induced by one of the three methods :

(a) Total hysterectomy with conservation of one or both ovaries;
(b) Intracavity radium;
(c) Deep x-ray therapy.

The first method is in the best interests of the patient. When at operation it is considered inadvisable to conserve one or both ovaries and the patient is aged 45 or under, it is a reasonable procedure to insert a 100 mg. oestradiol implant in the rectus muscle. This will ensure a symptom-free menopause.

—From an article by T. N. Macgregor, *Brit. J. Clin. Med.*, **14** : 853, 1960.

CURRENT MEDICAL LITERATURE

Postencephalitic Blepharospasm

METZ, L. N. AND MAGEE, K. R. (*A.M.A. Arch. Ophth.*, **63** : 692, 1960) from the Department of Neurology, University of Michigan Medical Centre, write :

Blepharospasm is an uncommon complication of post-encephalitic parkinsonism.

Necropsy findings in a patient with post-encephalitic blepharospasm disclosed primarily atrophy and loss of nerve cells in the substantia nigra and associated gliosis. Similar but much milder changes were noted in the globus pallidus and putamen.

No significant abnormality could be detected in the facial motor nucleus, the facial area of the motor cortex or in the corticobulbar pathways.

The pathophysiology of blepharospasm remains obscure although it can be postulated that the disturbance is related to an abnormality of extrapyramidal influences on eyelid closure rather than a disturbance in the primary motor system.

Glutamic Oxalacetic Transaminase and Lactic Dehydrogenase in Pregnancy

STONE, M. L., LENDING, M., SLOBODY, L. B. AND MESTERN, J. (*Am. J. Obst. & Gynec.*, **80** : 104, 1960) from the Department of Pediatrics and Obstetrics and Gynaecology and the Laboratory of Maternal-Newborn Research, New York Medical College, Flower and Fifth Avenue Hospitals, write :

The GOT and LDH levels were studied in 113 women in all three trimesters of pregnancy, the intrapartum period, and 6 weeks postpartum.

No elevations in GOT activity were found in any of the patients. Often the levels were lower than the average for non-pregnant women.

LDH activity was generally normal with a slight increase seen in a small number of patients.

At the time of the 6 weeks postpartum check-up, there was an increase in LDH activities in 11 of 22 patients.

This and other studies would seem to indicate that in normal pregnancy serum GOT activity is within normal limits but LDH activity may be increased.

Value of Routine Cytologic Smears in Pregnancy

SCHMITZ, H. E., ISAACS, J. H. AND FETHERSTON, W. C. (*Am. J. Obst. & Gynec.*, **79** : 910, 1960) from the Stritch School of Medicine, Loyola University in presenting a report of 10,369 obstetric patients who had routine vaginal smears observe :

One hundred and five patients had positive smears and, of these, 25 were found to have either invasive or *in situ* carcinoma of the cervix. In addition 19 cases showed basal cell hyperplasia.

There seems to be enough carcinoma of the cervix in younger women, especially those bearing children, to warrant the routine use of vaginal smears in pregnancy. In addition to those patients found to have cervical malignancies there are also those with basal cell hyperplasia which should be watched carefully for a possible progression of this lesion to malignancy.

Differential Diagnosis of Toxaemias by Renal Biopsy

POLLAK, V. E. AND NETTLES, J. B. (*Am. J. Obst. & Gynec.*, **79** : 866, 1960) from Presbyterian—St. Lukes, Cook County, and Research and Educational Hospitals, and the Departments of Medicine and Obstetrics and Gynaecology, University of Illinois, College of Medicine, Chicago; and from the Department of Obstetrics and Gynaecology, University of Arkansas, Little Rock give in the following lines the summary of their observation on the differential diagnosis of toxaemias of pregnancy by means of renal biopsy :

Renal biopsy specimens from pregnant women with hypertension, oedema, and proteinuria occurring severally or in combination, may show 3 types of histologic changes. Patients with toxaemia of pregnancy were divided into three groups on the basis of the renal histology : (1) pre-eclampsia (including eclampsia); (2) hypertensive vascular disease; and (3) primary renal diseases.

In some cases combination of the above were found, e.g., hypertensive vascular disease and pre-eclampsia.

Every patient was studied clinically by one or both authors before the renal biopsies were made, and a diagnosis of the underlying cause of the illness was recorded in every case. These clinical diagnoses were completely correct, as judged by the histology, in only 60 per cent of patients. Retrospectively, the most helpful clinical features in differentiating these conditions were examined early in gestation, the personal and family history of hypertension, the presence or absence of oedema, examination of the optic fundi, and the level of the serum uric acid.

Pelvic Tuberculosis

HENDERSON, D. N., HARKINS, J. L. AND STITT, J. F. (*Am. J. Obst. & Gynec.*, **80** : 21, 1960) from the Depart-

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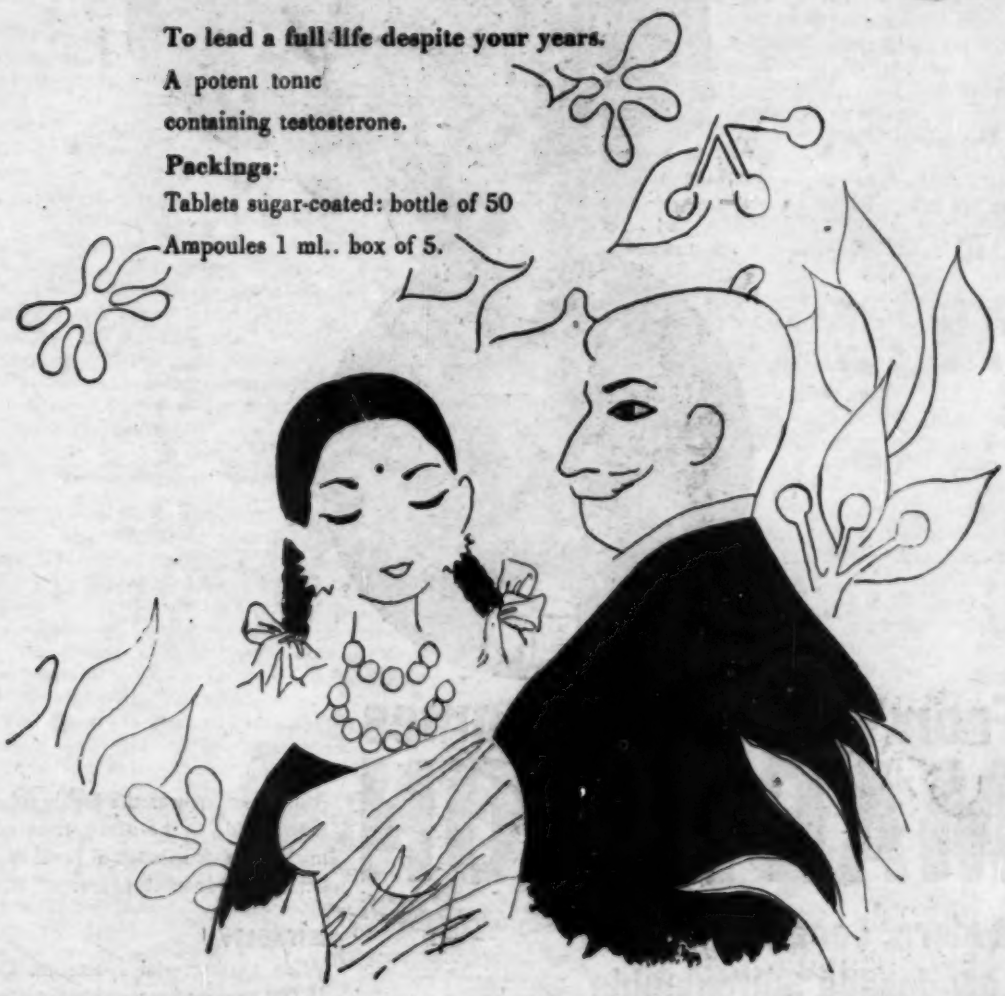

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ment of Obstetrics and Gynaecology, University of Toronto General Hospital, and the Toronto Hospital for Tuberculosis, Weston, give in the following lines the summary of their observations :

The cases reviewed in this presentation have served to emphasise that pelvic tuberculosis is a local manifestation of a generalised disease. Failure to realise this and direct therapy to the removal of the obvious pelvic lesion will result in serious complications and treatment failures.

This diagnosis of the lesion is difficult and, unfortunately, is most frequently made at laparotomy. An awareness of the increasing incidence of the disease, its importance as a cause of sterility, and the significance of a history suggestive or positive of past tuberculous infection in a case of pelvic inflammatory disease will lead to a correct diagnosis which might otherwise be missed. In suspected cases, endometrial biopsy, curettage, and culture may establish a positive diagnosis.

Once the diagnosis is established, the patient should receive the initial treatment under sanatorium conditions. The results with antimicrobial therapy with use of two and usually three of the antituberculosis drugs, justify the place of medical therapy as opposed to surgical extirpation of the pelvic organs. If adequately treated medically, less than 20 per cent of the cases will require operation, and should operation be deemed necessary it may be of limited extent and carried out with greater safety to the patient.

Vaginal Prolapse following Hysterectomy

SYMMONDS, R. E. AND PRATT, J. H. (*Am. J. Obst. & Gynec.*, **79** : 879, 1960) from the Section of Surgery, Mayo Clinic and Foundation from a review of the results of operations performed for posthysterectomy vaginal prolapse in 69 patients observe :

On follow-up 1 to 10 years or more after operation it was found that in 52 patients satisfactory support had been obtained, and in 11 it was unsatisfactory. Six patients could not be traced.

The repair was attempted abdominally in 15 patients. In 10 of the 11 patients in whom the primary abdominal approach was utilised successfully, it was necessary also to repair the vaginal walls from below or to support the vault with a fascial sling to ensure a satisfactory result.

The repair of the vault was attempted vaginally in 54 patients; 6 were untraced, but 41 (85·4 per cent) of the 48 traced patients had a satisfactory result.

Among the patients in whom the vagina was preserved and who have attempted to have coitus, vaginal function was satisfactory in 9 of 13 treated abdominally (although 2 of the 9 have recurrent prolapse) and in 12 of 21 treated vaginally.

A technique for vaginal repair of vault prolapse is presented.

Effect of Meprobamate on Labour and Delivery

INMON, W. B. AND KITCHINGS, J. T. (*Am. J. Obst. & Gynec.*, **79** : 1139, 1960) from the Department of Obstetrics and Gynaecology, University of Mississippi Medical Centre from an analysis of the study on the effect of meprobamate on labour and delivery in a total of 176 patients, and from information obtained on 36 items observe :

Sedation was evaluated on the basis of verbal and physical behaviour. The following conclusions can be made :

Although the differences observed in the group receiving meprobamate and meperidine (Group 1) are not great, they are consistently in the direction of a better sedated, more comfortable, and happier patient.

Although the patients receiving meprobamate appeared better sedated and more comfortable, less meperidine was required to produce this effect.

Amnesia for the events of labour and delivery may be increased by the use of meprobamate.

The length of labour is not increased and may be slightly decreased.

Meprobamate does not affect the incidence of nausea and vomiting during labour, delivery, and the first hour of the postpartum period.

Meprobamate has no measurable effect upon the infant.

Scopolamine appears to nullify the advantages of meprobamate.

Use of Intranasal Oxytocin in Obstetrics

HENDRICKS, C. H. AND GABEL, R. A. (*Am. J. Obst. & Gynec.*, **79** : 780, 1960) from the Department of Obstetrics and Gynaecology, Western Reserve University School of Medicine from a study of a laboratory evaluation of the use of intranasal oxytocin observe :

With use of intrauterine catheters to record uterine activity, the effect of intranasal administration of synthetic oxytocin was studied in a series of 25 pregnant subjects, 16 of whom were at or beyond term, the remainder begin at 38, 36, 34, 30, 28, 22, and 12 weeks, respectively.

The drug was applied either in drops or in the form of a fine spray from a small plastic squeeze bottle.

Following administration of the drug, any increase in uterine activity usually appears within 5 to 7 minutes.

The peak activity is usually achieved within 10 to 20 minutes, after which there usually begins a slow decline toward the level of spontaneous activity.

A single instantaneous intranasal application of the drug represents a very modest dose, the effect being roughly comparable to that brought about by the continuous intravenous infusion of 2 mU. of oxytocin per minute for 5 minutes.

The contractions stimulated by oxytocin are indistinguishable in all characteristics from spontaneously occurring contractions.

The amount of response induced by intranasal oxytocin is principally dependent upon the degree of sensitivity to oxytocin which the uterus has previously achieved.

Peptic Ulcer in Rheumatoid Arthritis and Relationship to Steroid Treatment

BOWEN, R., JR., MAYNE, J. G., CAIN, J. C. AND BARTHOLOMEW, L. G. (*Proc. Staff Meet. Mayo Clin.*, **35** : 537, 1960) from the Section of Medicine, Mayo Clinic, Mayo Foundation, observe :

Review of the records of 2114 patients with rheumatoid arthritis who were seen at the Clinic in the years 1954 and 1957 revealed that the incidence of peptic ulcer in patients with rheumatoid arthritis is three to four times as great as the incidence in the general patient population at the Clinic. The incidence of peptic ulcer was 8·1 per cent for 877 rheumatoid patients who had not received systemic treatment with steroids and 7·5 per cent for 1237 rheumatoid patients who had received steroids in significant amounts.

The incidence of peptic ulcer in 331 rheumatoid patients with hypercortisonism was 8·2 per cent.

Gastric ulcer represented 7·0 per cent of all ulcers found in the group who did not receive steroids or received them intra-articularly and 18·3 per cent of those in the steroid-treated group.

Nutritional Cirrhosis of the Liver

GROS, H. (*German M. Monthly*, **5**: 311, 1960) from the Department of Medicine, University of Mainz, writes:

Damage from malnutrition, particularly to be found in the underdeveloped areas of the world, are of great importance for the development of the cirrhosis of the liver. Faulty nutrition is worse than malnutrition. There is often a coincidence of the nutritional damage and various infections. The alcoholic cirrhosis of the liver, still unexplained, may be caused mainly by a deficiency of proteins and vitamins.

Results in 542 biopsies of the liver of cases of past malnutrition, among them 144 cases of cirrhosis, demonstrated the importance of accumulative damage for the development of cirrhosis. Foremost is virus hepatitis, secondly bacillary dysentery. The different results and opinions of various workers regarding the importance of malnutrition as the cause of cirrhosis of returned prisoners-of-war are discussed. Protein deficiency often causes haemosiderosis of the liver but rarely haemochromatosis (siderophilia).

Needle Biopsy of the Lung

SABOUR, M. S., OSMAN, L. M., GOLVAN, P. C. L. AND ISHAK, K. G. (*Lancet*, **2**: 182, 1960) from Ein-Shams University, Cairo and U.S.A. Naval Medical Research Unit No. 3, Cairo, write that the best treatment for intrathoracic lesions cannot be given without accurate histological diagnosis. The necessity for early diagnosis of unilateral solid pulmonary infiltrates suspected of being bronchogenic carcinomata is of the utmost importance. Bronchoscopy does not detect peripheral tumours, and even some central tumours. In such cases needle biopsy of the lung may be preferable to biopsy at open thoracotomy.

The technique of needle biopsy is simple and safe, and it usually gives sufficient material for an accurate diagnosis to be made.

In carefully selected cases and in experienced hands needle biopsy of the lung can be used as a routine means of diagnosing pulmonary lesions, together with radiography, sputum examination, and bronchoscopy.

Thanks are due to Dr. John Glen, senior chest physician at Springfield.

Hypokalaemia, Carcinoma and Cushing's Syndrome

BAGSHAWE, K. D. (*Lancet*, **2**: 284, 1960) of St. Mary's Hospital, London, writes:

A man with Cushing's syndrome had severe hypokalaemia and metabolic alkalosis. Six months after successful removal of benign hyperplastic adrenal glands he was found to have carcinoma in lymph-glands.

A review of the plasma potassium levels in 111 cases of Cushing's syndrome and the plasma bicarbonate levels in 45 cases of Cushing's syndrome showed that severe hypokalaemia and alkalosis are uncommon.

If severe hypokalaemia (serum potassium 3·0 mEq. per litre or less) and alkalosis are found in a patient with Cushing's syndrome, then the chances are high that the patient has an associated carcinoma or that carcinoma will subsequently develop. This was so in 21 out of 23 reported cases.

The development of Cushing's syndrome may precede the finding of the associated carcinoma by months or years.

The carcinoma may arise in any of several organs. Metastases in the adrenal glands are not a necessary feature of this association.

Lung Biopsy

SHIELDS, T. W. AND SWEANY, S. K. (*Surg. Gynec. & Obst.*, **110**: 385, 1960) from the Surgical and Medical Departments of the North-western University Medical School, Veterans Administration Research Hospital, and the Chicago Municipal Tuberculosis Sanitarium, Chicago, in presenting the value and indications for lung biopsy observe that a simplified technique of direct lung biopsy under local anaesthesia with positive pressure oxygen breathing and no postoperative chest drainage is described. The results of 36 biopsies in 35 patients are presented. A definitive diagnosis was made in 31 of the 35 patients, 89 per cent, from the tissue obtained for the lung biopsy. It was nondiagnostic in 3 patients and wrong in one. In the 31 patients in whom a definitive lung biopsy was obtained, the tentative clinical diagnosis was confirmed in 55 per cent of the patients, whereas, it was found to be unsupported in 45 per cent by final tissue diagnosis.

Tolbutamide in the Treatment of Thromboangiitis Obliterans

SINGH, I. AND BRARA, N. S. (*Lancet*, **2**: 625, 1960) from Armed Forces Medical College, Poona, write:

36 cases of thromboangiitis obliterans were treated with tolbutamide, 0·5 g. thrice daily with meals. Within three to four weeks there was spectacular relief of intermittent claudication and rest pain in the 34 patients who had these symptoms, but the neuritic pain of the 2 other patients did not respond. When tolbutamide therapy was discontinued, relief persisted for one to seven weeks. With maintenance therapy 3 cases have been in continuous clinical remission for over two years.

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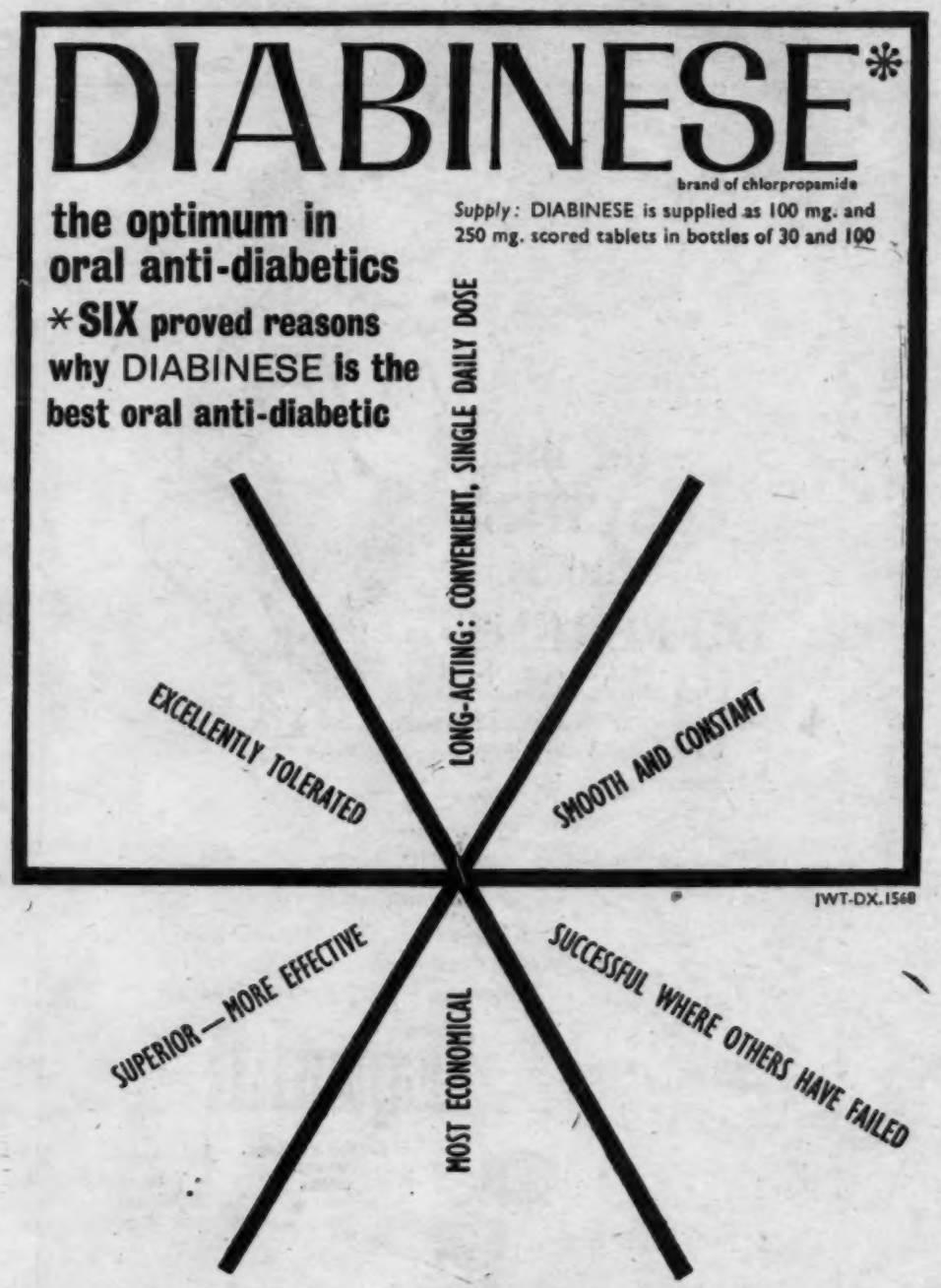

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AWARDS TO DOCTORS BY THE PRESIDENT OF INDIA

Chaudhuri, Rabindra Nath, M.B., F.R.C.P.E., T.D.D., F.S.M.F., F.N.I., was born on February 1, 1901, in Kantalgoria, Hooghly district (West Bengal). Educated in Calcutta, he took M.B. degree in 1925 from Medical College, Calcutta, obtaining Government scholarship, prize and certificates. Served on the Medical College Hospital Junior Staff in various offices and then as a research assistant of Sir Ram Nath Chopra at the Calcutta School of Tropical Medicine. Joined the Bengal Medical Service, 1928 (Upper) and held senior appointments in the Medical College Hospitals between September 1928 and June 1932. In June 1932 was again associated with the School of Tropical Medicine and has since served continuously as House Physician; Assistant Professor, Additional and Officiating Professor and as Professor of Tropical Medicine, since July 1946 and finally as its Director and Superintendent and Senior Physician of the Carmichael Hospital for Tropical Diseases since September 1950. Between September 1938 and July 1940 went to the United Kingdom to pursue higher studies in Medicine as a Rockefeller Fellow. Obtained M.R.C.P. (EDIN.) and T.D.D. (WALES). Was the Assistant Editor of the *Indian Medical Gazette* for several years since 1942 and edited the Second Volume of Napier's *Principles and Practice of Tropical Medicine* and the *School Pharmacopoeia*. He is the Editor of the *Quarterly Bulletin of the School* and a member of the Editorial Board of the *Indian Journal of Medical Research*.

DR. R. N. CHAUDHURI

Research contributions include chemotherapeutic and chemoprophylactic studies on malaria, clinical, epidemiological and experimental research on splenomegaly in rural areas of West Bengal, experimental works with argemone oil or its alkaloids, and the pathogenesis of epidemic dropsy, observations on body fluid and electrolyte changes in cholera, extensive clinical, epidemiological and experimental research on tropical eosinophilia, devising a new technique making it possible to follow the course of amoebic infection in animals at different stages of development of the disease, and clinical, metabolic and epidemiological investigations on protein malnutrition in children, a problem of national importance.

Published about 400 scientific articles in medical journals in India and abroad, and the work has been referred to in standard books.

Awarded Coates Medal (Calcutta University) in 1952 and Minto Medal in 1954 for medical research. Presided over the Medical and Veterinary Section of the Indian Science Congress in 1954. Elected a Fellow of the State Medical Faculty, West Bengal, and a Fellow of the National Institute of Sciences of India. Admitted a Fellow of the Royal College of Physicians, Edinburgh in 1958.

Proceeded to China on lecture tour for six weeks in 1955 as a Member of Medical Delegation of the Government of India. Presided over a section in the VI International Congress on Tropical Medicine and Malaria held in Lisbon in September 1958. Had been to United States, U.K. and Europe as an Exchange Visitor under the Rockefeller Foundation in 1958.

Contributed largely towards the recent expansion and increased activities of the Calcutta School of Tropical Medicine and the attached hospital.

Awarded PADMA BHUSAN on the Republic Day in January 1960.

Doraiswami, Kalpathy Rama Iyer, Director, Premier Radiological Institute and Cancer Hospital, Madras, was born on March 21, 1908, joined Royapuram Medical School in 1927 and passed out in 1930. Was a prize student.

Started radiological practice in 1933 and is one of the pioneers in Madras in this field. Gradually built a first class institution with all the latest equipment. Visited the United States, U.K., and the Continent in 1950. Has worked in a number of radiological centres in these countries. Attended the 6th International Congress of Radiology in London and the World Cancer Conference in Paris. Made a second visit to the Continent and U.K., in 1953. Attended the 7th International Congress of Radiology in Copenhagen and read a paper.

DR. K. R. I. DORAISWAMI

Has contributed a number of articles on radiology. Is member of: American Radium Society, Radiological Society of North America, Danish Radiological Society, Nederlandse Verenigang Voor Electrologie En Roentgenologie, Indian Medical Association, Indian Radiological Association.

Had been vice-president of Indian Medical Association, Madras Branch and Indian Pathological Association, Madras Branch.

Awarded PADMA SHRI on the Republic Day in January, 1960.

Isaac, Mary Ratnamma, L.M.S. (MADRAS), M.R.C.S. (ENG.), L.R.C.P. (LOND.), recipient of the PADMA SHRI on April 8, 1959, was born on July 13, 1887. Starting her career as a teacher she married Sri J. R. Isaac, B.A., M.B.E., Secretary, Y. M. C. A. in 1904. Completing her medical course in 1907 from Medical College, she joined the Madras Medical Service the same year. Proceeded to U.K. in 1925 for higher studies, became M.R.C.S. and L.R.C.P. in 1926 and also took a post-graduate course in children's disease. Was posted to Government Maternity Hospital, Robertsonpet, Kolar Gold Fields and served in Mysore in various capacities. During 1932-37

DR. M. RATNAMMA ISAAC RECEIVING THE PADMA SHRI AWARD FROM THE PRESIDENT OF INDIA (APRIL 8, 1959)

she was lecturer in physiology and pharmacology in Bangalore and professor of midwifery and gynaecology in Mysore.

She had been drawn to social work since her student days and joined the Madras Social Service League and the Servants of India Society. Actively connected with the Gunamba Trust she joined the Mysore Branch of the Indian Red Cross Society whose honorary secretary she became in 1933, the connection lasting till 1958. Among other bodies she had been connected with are : Indian Conference of Social Work, Bharat Sevak Samaj, International Fellowship, the Hind Kust Nivaran Sangh, All-India Tuberculosis Association, etc.

She was a member of the Mysore Legislative Council for 4 years, 1944-47, nominated by H. H. the Maharaja of Mysore. After Independence she was elected to the Mysore Legislative Assembly and was the only lady member of the Mysore Constituent Assembly.

Since 1942 she has been running a maternity and nursing home in Bangalore. She is quite active and still does a lot of touring to visit villagers.

Khanolkar, Vasant Ramji, B.SC. (LOND.), M.D. (LOND.), F.N.I., F.A.SC., was born on April 13, 1895. Graduated in Science in 1916 and in Medicine in 1918 from the London University, Assistant Bacteriologist at the University College, London, 1920, M.D. (Pathology) from the University of London 1923, being the only successful candidate in three years. Awarded Graham Research Fellowship of the University 1921-24. As a research assistant he worked under the guidance of Sir William Baylis and Prof. A. E. Boycott at the University College Hospital and Medical School. Appointed Professor of Pathology at the Grant Medical Collegee (1924-25) and later Professor of Pathology and Bacteriology at the Seth G. S. Medical College (1926-41) in Bombay. He laid the foundation of modern training in Pathology and Bacteriology in India and organised the teaching of these subjects to undergraduate and postgraduate students at the University of Bombay. He was the founder and first president of the Indian Association of Pathologists and the Association of Teaching Pathologists. Appointed Director of Laboratories and Research at the Tata Memorial Hospital, 1941, and is at present Director of the Indian Cancer Research Centre, Bombay. Dr. Khanolkar still continues as Honorary Director of Laboratories of the Tata Memorial Hospital. He has done pioneering work on cancer in India and on cancers associated with the habits and customs of the Indian people. The staff of the Biology and Medical Divisions of the Atomic Energy Establishment, Trombay, Bombay, the Leprosy Enquiry and the Neurological Unit, under the Indian Council of Medical Research and the Unit for study of Physiology of Human Reproduction, Government of India, are also working under his direction.

Dr. Khanolkar has been a member of several committees appointed by the Government of India for the promotion of medical education and research in the country and was awarded the PADMA BHUSHAN in 1955 by the President of India for meritorious service in the field of his study, particularly in relation to cancer.

Elected Chairman of the International Cancer Research Commission 1950, and in July 1958 elected President of the International Union against Cancer for a period of four years. He has been a representative of the Government of India on the United Nations Scientific Committee on the Effects of Atomic Radiation since 1956 and was appointed Vice-Chairman of the Committee in June, 1958.

Appointed Vice-Chancellor, University of Bombay, March 1960.

The Cancer Cytology Foundation of America nominated Dr. Khanolkar "to receive a citation in recognition of brilliant contributions to cancer research" at its meeting held in Mexico in May 1960. In the same month he was elected an Honorary Fellow of the Royal College of Physicians, Edinburgh.

He has been member, fellow, vice-president or president of a large number of learned societies, viz., Member, Pathological Society of Great Britain and Ireland, 1921; Fellow, Royal Society of Medicine, England, 1921; Fellow, 1946, Vice-President 1957, National Institute of Sciences, India; Vice-President and Member, 1947,

DR. V. R. KHANOLKAR

President, 1960, Society of Biological Chemists, India; Honorary Member, American Association for Cancer Research, 1948; Vice-President, 1949-52, Indian Academy of Sciences; President, International Cancer Research Commission, 1950-54; President, Indian Association of Pathologists, 1950-53; Member, Institute of Biology, London, 1952; President-Elect, 1954-58, President, 1958-62, International Union Against Cancer; Honorary Life Member, New York Academy of Sciences, 1956; Member, International Academy of Pathology, 1957; Member of Council, Indian Academy of Sciences, 1959-61; Honorary Fellow, Royal College of Physicians, Edinburgh, 1960.

Paymaster, Jal Cawshaw, M.B.B.S. (BOM.), F.R.C.S.E., was born in Bombay on January 28, 1908 in humble circumstances. Educated at St. Xavier's High School and College, supporting himself by scholarships. Entered Grant Medical College in 1928 and after a bright career graduated in 1933. After being on the house staff in several hospitals proceeded to Edinburgh and obtained the Fellowship of the Royal College of Surgeons of Edinburgh in 1938. On return from U.K. was appointed Assistant Surgeon at Tata Memorial Hospital and specialised in cancer. Was sent to U.S.A. for higher studies in cancerology. Shortly after return was appointed head of the surgical unit of the hospital in 1943.

DR. J. C. PAYMASTER

His contribution dealing with the classification of oral and oropharyngeal cancer has merited appreciation from all quarters. As member of the International Union against Cancer he was invited to work on a committee on chemotherapy of cancer during the 7th International Cancer Congress held at London in 1958. He is now also the Superintendent of the Tata Memorial Hospital. In January 1959 he was awarded the PADMA BHUSHAN by the President of India.

Shirodkar, Vithall Nagesh, M.D., F.R.C.S. (ENG.), F.A.C.S., was born on 27th April 1899, at Shiroda (Goa). Educated at Hubli, Poona and Bombay from Grant Medical College, Bombay, 1923. Obtained M.D. (Bombay) in Obstetrics and Gynaecology in 1927. Fellowship of the Royal College of Surgeons, England, 1931. Professor of Obstetrics and Gynaecology at the Grant Medical College, Bombay, 1935-1955. Fellowship of the American College of Surgeons, 1954. Obtained Bhansali award for contributions to Obstetrics and Gynaecology, 1958; the Indian Academy Gold Medal for research on Tuboplasty, September 1959 and the President of India's award of PADMA BHUSHAN for contributions to Obstetrics and Gynaecology, in January 1960. Now Emeritus Professor of Obstetrics and Gynaecology at the Grant Medical College, Bombay.

DR. V. N. SHIRODKAR

Vakil, Rustom Jal, M.D. (LOND.), F.R.C.P. (LOND.), M.A.H.A. (U.S.A.), F.A.P.H.A., D.T.M. & H. (LOND.), F.R.F.P.S.G., F.A.C.C. (U.S.A.), F.C.C.P., F.C.P.S., F.A.SC., F.R.G.S., F.N.I., L.L. (U.S.A.), was born on 17 July, 1911. Educated at Bombay and England, studied at St. Thomas's Hospital, London, M.R.C.S. (ENG.), L.R.C.P. (LOND.) 1934, M.B.B.S. (LOND.) 1934, M.R.C.P. (LOND.) 1936, F.R.F.P.S. (GLAS.) 1937, M.D. (LOND.), 1937 D.T.M. & H. (LOND.) 1938, standing first in the University of London. Recipient of twenty-nine medals, prizes and scholarships, including the following from the University of London: the Solly Medal and Prize, the Mead Medal, the Symour Graves Toller Medal, the Wainwright Medal, the Lalcaca University Gold Medal.

Fellow of the Royal College of Physicians, London, 1960; the American College of Cardiology, 1959; the American College of Chest Physicians, 1958; The American Public Health Association, 1959; the Royal Society of Medicine, 1958; the National Institute of Sciences of India, 1958; the Academy of Sciences of India; the College of Physicians and Surgeons of India; the Royal Geographical Society; Member of: the American Heart Association, 1958; the American Association for the Advancement of Science, 1959.

Sir Nilratan Sircar Lecturer for 1957—India.

Nominated for Dr. S. N. Bhansali, Lecture and Prize, by the Bombay Medical Union, India, for the year 1960.

First Asian to be awarded the Albert Lasker Award 1957, in Medical Research, by the American Public Health Association, for contribution on the use of Rauwolfia in Hypertension.

Awarded PADMA BHUSAN by the President of the Republic of India, on 26th January 1958, for Medicine.

DR. R. J. VAKIL

Delegate to: the First World Conference of Cardiology. Paris, 1950; the Second European Congress of Cardiology, Sweden, 1956, on the International Advisory Panel of WHO, Geneva, Vice-Chairman, International Committee on Rehabilitation in Cardiovascular Disease, author of over two hundred medical publications and articles.

Honorary physicians, Cardiology Department, Bombay Hospital 1960, King Edward Memorial Hospital since 1941, in-charge cardiological department, K. E. M. Hospital, he is connected with a large number of Hospitals, institutions. Examiner in Medicine of several universities.

Editor, *Indian Year Book of Medical Sciences*, 1959-60; on the Editorial Board, *Journal of the Indian Medical Profession*, *Current Medical Practice*, the *Indian Heart Journal*, the *Medical Guide*, *Indian Physician*.

NOTES AND NEWS

WHO Health Adviser to the Government of Nepal

Dr. M. L. Ahuja, an Indian bacteriologist and former Director of the Central Research Institute, Kasauli, and the Pasteur Institute, Coonoor, has been appoinetd by the World Health Organisation as its public health adviser to the Government of Nepal.

One of the primary tasks of Dr. Ahuja will be to assist the Government of Nepal in assessing the country's medical and health needs, says a WHO Press release issued in New Delhi.

Soviet-aided Drug Projects

Mr. Manubhai Shah, Minister for Industry, in a written answer in the Lok Sabha on 8-12-60 said that it was proposed to set up a separate company for implementing the new four drugs projects with Soviet collaboration :

1. Antibiotics units at Rishikesh, 2. Synthetic drugs unit at Sanatnagar, Hyderabad, 3. Surgical instruments and medical appliances unit at Madras, and 4. Photochemical unit at Hunar (Kerala).

The total capital investment excluding investment on land, township and working capital on these was estimated at Rs. 28 crores.

As the penicillin factory at Pimpri was a separate company and as the collaboration had been with UNICEF and WHO for penicillin manufacture and with Messrs. Merck Sharpe and Dohme of U.S. for streptomycin production, it would have to be kept as a separate company. There was therefore, no proposal to integrate Hindustan Antibiotics Ltd., Pimpri, with the new company.

However, as the technical and administrative problems of the drugs project with the Soviet collaboration and Hindustan Antibiotics at Pimpri and the organic intermediates plant at Panvel (Maharashtra) with German collaboration would be somewhat of common nature, a co-ordinating committee of the chairmen and managing directors of these three companies was proposed to be set up for discussing and reviewing common problems of these factories.

Indian Congress of Radiology

The 15th Indian Congress of Radiology will be held in Irwin Hospital, New Delhi, from 25th February to 27th: February, 1961 (both days inclusive).

Further information may be available from Dr. S. P. Aggarwal, Organising Secretary, 15th Indian Congress of Radiology, 10, Curzon Road, New Delhi.

International Congress of Angiology

The IV International Congress of Angiology, organised by the Union Internationale d Angeiologie of Paris, will be held in Prague, Czechoslovakia, in the days from September 4-9, 1961. The leading theme of the Congress is : "Metabolism of the Vascular Wall".

The preliminary programme of the Congress, containing 50 general reports offers the possibility to submit for presentation till February 1st, 1961, "Communications", to these general reports. The Secretary General of the Congress, Prof. Dr. Z. Reinis, IV Medical Clinic, U nemocnice 2, Praha 2, Czechoslovakia, will be glad to comply with any request for invitation.

A New Journal of Pharmacology

An international journal of pharmacology, toxicology, clinic and therapy under the title of *Chemotherapia* has been recently published as the official organ of the International Symposia of Chemotherapy in Geneva. It will appear every two months (one volume of six numbers) and will cost SFr. 56. The editors-in-chief are Dr. H. P. Kuemmerle, Tubingen and Dr. P. Rentchnick, Geneva.

Symposium on Indigenous Drugs

Under the joint auspices of the Indian Pharmaceutical Association (Maharashtra State Branch), the Indian Medical Association (Bombay Territorial Branch) and the Bombay Medical Union a symposium on "Indigenous Drugs" will be held on the 26th February, 1961 in Bombay to focus the attention of the medical practitioners and pharmaceutical chemists on some promising vegetable drugs which could come into wider use. Eminent pharmacologists and clinicians connected with researches on indigenous drugs will be participating in the symposium. Further details will be available from the Convener, Symposium Organising Committee, Kalam Kutir, 3rd Floor, 213-19 Frere Road, Bombay.

Dietary Atlas for India

The preparation of a dietary atlas bringing together the distinctive food habits, beliefs, customs and consumption patterns of people in different parts of India is now engaging the attention of nutritionists of the country at the suggestion of the Union Minister for Health.

Giving this information while inaugurating the meeting of the scientific advisory board of the Indian Council of Medical Research at Hyderabad on 4-12-60 Sri Karmarkar said that this type of information was necessary not only for proper evaluation of diet in relation to physical efficiency and endurance of the population groups studied but also for basing the country's future education and ameliorative programmes.

"I am sure", he said, "when such a study is completed we will be able to sort out which of the practices of our ancestors we should emulate and which we should change in order to derive full benefit of the knowledge gained and the existing resources."

Radio Isotopes

The Chief Minister of Maharashtra, Mr. Y. B. Chavan, inaugurated at Bombay on 5-12-60 a five-day symposium on "Radio isotopes and radiation in entomology", sponsored by the International Atomic Energy Agency at the Indian Merchants' Chamber hall on 5-12-60.

Mr. Chavan said that great advances had been made in the atomic field, both in destructive and in construc-

Recent research in Chemical Pathology has revealed the importance of vitamins in the prevention of "Deficiency Diseases". Vitamins are essential to the working of intricate enzyme systems which govern vital functions like cellular metabolism, tissue oxidation and resistance to stress. *They are necessary to the body's most basic unit—the human cell.*

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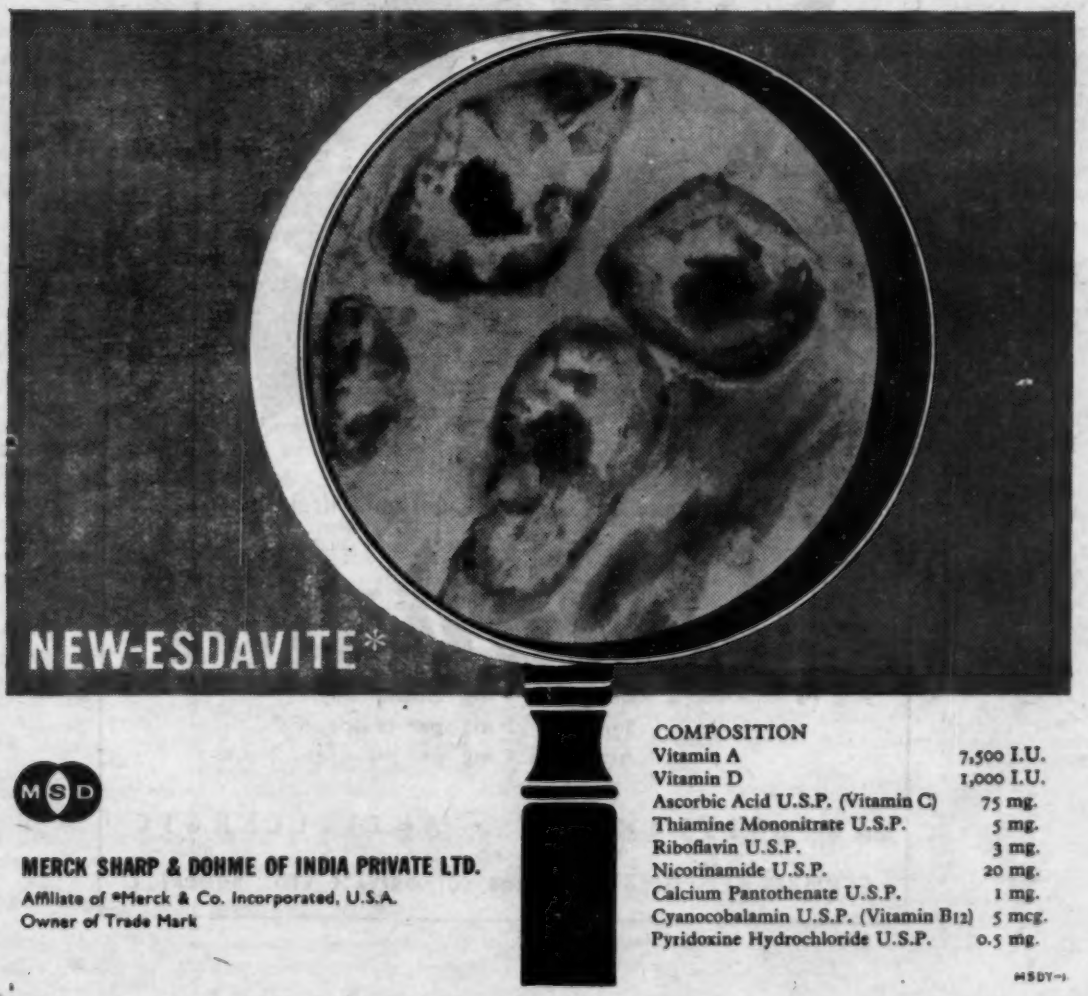

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tive spheres. He was glad to know that phenomenal progress had been made in harnessing the discoveries for fighting diseases and for other peaceful uses.

Mr. Chavan stated that some of the most serious diseases that afflicted men and beast were transmitted by insects. In India the number and variety of predatory and pestilential insects are amazing. Their control and possible elimination was indeed a gigantic task, he added.

Dr. H. J. Bhabha, Chairman of the Indian Atomic Energy Commission who also addressed the inaugural session, said that the Canada-India reactor. when commissioned, would be the largest producer of isotopes in the world.

Dr. Bhabha said that the radio isotope technique had ushered a new era of scientific research. One of the main tasks before the Indian Atomic Energy Commission, therefore, was to make it available to the scientific workers all over this country.

He said the use of isotopes was increasing in this country along with its production. He, however, regretted that Indian Industries had not yet realised the importance of isotopes. Dr. Bhabha then gave an account of the larger radiation facilities available at Trombay and disclosed that research was going on for the use of radiation for the disinfection of stores and foodgrains. For this, he added, the "sterile male technique" could be particularly effective. In Florida (U.S.A.), the entire fruit-fly population was destroyed by this method.

Dr. Bhabha said that there were plans to have mobile radiation facilities for grain warehouses. He said that electronic instrumentation for measuring radiation for biological and medical research was under production at Trombay and would be made available very soon. The production would, he added, fulfil the requirements of such instruments in this country.

Dr. G. E. Roth, Representative of the Director-General of the I.A.E.A., in his speech stated that this was the first meeting of its kind held outside Europe and the discussions and findings of the symposium would be of immense value.

Research on Cholera

The Indian Council of Medical Research has decided to set up a cholera research centre in Calcutta to carry out continuous research on various aspects of the problem of cholera with a view to developing ultimately practical measures for the control and prevention of the disease.

The Health Minister, Sri D. P. Karmarkar, giving this information in the Lok Sabha on 28-11-60 said the Government of West Bengal who were collaborating in the project had agreed to place two wards of 40 beds each in the infectious diseases hospital, Calcutta, at the disposal of the Indian Council of Medical Research for this purpose.

Problems of Research in Medicine

The Advisory committees and sub-committees of the Indian Council of Medical Research which concluded their nine-day session from December 3 in Hyderabad, discussed problems of research in various fields of medicine and public health and proposals for investigation during the Third Five-Year Plan Period.

The Advisory Group in Cholera of the Indian Council of Medical Research has recommended the establishment of a permanent research centre at Calcutta.

The Committee on Tuberculosis stressed the need to continue research at the Chemotherapy Centre in Madras with a view to evolving a national programme for the control of the disease. The Group of Poliomyelitis recommended small-scale manufacture of oral vaccines, a reoriented programme of research to investigate the therapeutic value of indigenous drugs of repute was also recommended. A seminar on coronary heart disease was recommended in order to review the existing knowledge on the subject.

The Mental Health Advisory Committee considered that a study of the psychological problems of the people in relation to diverse social phenomena should be undertaken.

Carefully planned morbidity and mortality surveys in different representative areas of the country were recommended. Opening of special research cells and registries of different diseases were recommended in medical colleges and hospitals.

Recommendations of these Advisory Committees will be considered by the Scientific Advisory Board and the Governing Body of the Council when the necessary financial allotment for the prosecution of these projects will be made.

Donation of Eyes

A Bill to make provision with respect to the use of eyes of deceased persons for therapeutic purposes has been published in the Andhra Pradesh Gazette on 3-12-60.

According to the statement of object and reasons, the expansion of the Corneal Graft Surgery Branch of ophthalmic surgery in this country has been impeded by lack of adequate supply of cadaver material. At present, the cadaver material which to be obtained within a very short time after death, can only be obtained from destitutes who die in general hospitals and whose number is very negligible. There are voluntary donors who wish to donate their eyes after death. But to accept such donations of eyes without authority of law, it is apprehended, would give rise to several legal difficulties. In order to obviate such legal difficulties and to ensure a liberal and constant supply of cadaver material for therapeutic purposes, the government consider it necessary to undertake legislation providing for the use of eyes of deceased persons voluntarily bequeathed for therapeutic purposes.

The Bill gives effect to the above object.

Plan for T.B. Clinics

The Union Ministry of Health proposes to establish 200 tuberculosis clinics, five T.B. demonstration and training centres, 5,000 isolation beds, seven rehabilitation world centres and about 25 mobile T.B. clinics for rural areas during the Third Plan.

To achieve these targets, steps are being taken to remove the difficulties responsible for the shortfalls in the Second Plan period. A scheme for the implementation and organisation of the national tuberculosis programme on a zonal basis is also being worked out to ensure closer co-operation.

Facilities for Family Planning

The operative method is the surest method for family planning and facilities for it would be available during Third Plan at the district level in the form of mobile units, said Lt.-Col. Raina, Director of Family Planning, Government of India. Lt.-Col. Raina, who was speaking in Calcutta on 30-12-60 at the seminar for senior public health administrators held at the All-India Institute of Hygiene and Public Health, said that family planning was really a social policy for family welfare. Facilities for all types of contraceptives should be made available to the rural people.

Dr. Muktha Sen, Director of the Institute, said that the States which had not yet offered facilities for operative methods with incentives, as had been done in Kerala, Madras, Mysore and Bombay, should start implementing schemes for sterilisation cautiously. She emphasised the need of paying more attention to the social and psychological implications while making mass propaganda for sterilisation.

Mental Hospital Superintendents Meet

The wholesale replacement of the outdated Indian Lunacy Act 1912, collection of data through sample surveys, modern methods of administration of mental hospitals in India and better welfare measures for people suffering from mental diseases are the burden of the first conference of Superintendents of mental hospitals which was inaugurated in the Agra University Senate Hall by Mr. D. P. Karmarkar, Union Health Minister on 25-11-60.

Mr. Karmarkar announced on the occasion of a grant of Rs. 10,000 to the Mental Hospital at Agra (considered one of the best among 33 in India) for a pilot project, survey collection of data and incidence of mental disease.

The conference, which was attended by 30 Superintendents and a number of other medical men from all over the country, was also addressed by Lt.-Col. V. Srinivasan, Director-General of Health Services, Dr. K. M. Lal, Director of Medical and Health Services and Dr. K. C. Bube, Superintendent of the Agra Mental Hospital.

Mr. Karmarkar supported the suggestion of holding such conference annually and selected Delhi for the next session. He said that a new draft to replace the existing Lunacy Act was already under consideration.

Earlier Col. Srinivasan said that the main task of the conference was to devise ways to improve the facilities for collection of data and proper treatment of mental diseases.

Dr. Lal discussed the causes of mental diseases and said a change from the old order to new and breaking of joint families or disintegration of families and lack of peaceful living in big cities were also contributing factors. He said it was necessary that proper steps were taken in India to prevent the situation developing such as in the U.S.A., the U.K. and other industrially advanced countries where mental diseases were more common than other diseases.

Institute of Mental Diseases for West Bengal

The West Bengal Government has decided to set up an Institute of Mental Diseases in the premises of the now defunct A. V. Leper Hospital, Gobra, Calcutta, with 100 indoor beds at an estimated cost of Rs. 11,33,100 it is learnt.

The Netaji Hall Society

A society called "The Netaji Hall Society" with Mr. S. R. Das, Vice-Chancellor, Visva Bharati and former Chief Justice of Supreme Court, as its president, has been formed in Calcutta recently.

The society, it is stated will construct a six-storeyed building adjacent to Netaji Bhavan on Elgin Road (South Calcutta) to house a modern auditorium accommodating over 500 people and Research Centres and Laboratories of the Child Health Centre, now functioning at Netaji Bhavan, Libraries, Research Rooms, Laboratories and Archives of Netaji Research Bureau. The society will also function as an up-to-date centre for social, cultural and educational activities of Sarat Bose Academy.

It is also stated that the ground floor of Netaji Bhavan will continue to be devoted to social welfare work. The rest of the building will be ultimately taken up entirely by the Netaji Museum planned by the Netaji Research Bureau. The Netaji Museum is due to be formally opened on the second floor of Netaji Bhawan on January 23, 1961.

CORRESPONDENCE

The Editor is not responsible for the views expressed by correspondents

Short Service Commission in A.M.C.

SIR,—While going through the April 16, 1960 issue of the Journal, I came across the letter from Dr. Kulkarni and also an editorial about "Short Service Regular Commission (SSRC) in A.M.C." As an officer released from SSRC in AMC, I would like to present a few facts and my views to clear certain misconceptions on the subject.

AMC offers two types of commissions to the medical graduates. A medical graduate desirous of joining AMC permanently has to appear for U.P.S.C. examination and qualify himself to get commission in Direct Permanent Regular Commission (DPRC). And AMC does take many of the graduates as DPRC officers.

In my view, SSRC is for those who have crave for army life but have not decided to take it as a permanent career. This commission is primarily for three years, extendable up to 7 or 9 years. Any SSRC officer can get release after three years if he thinks army life does not suit him or *vice versa*, or he can extend his term

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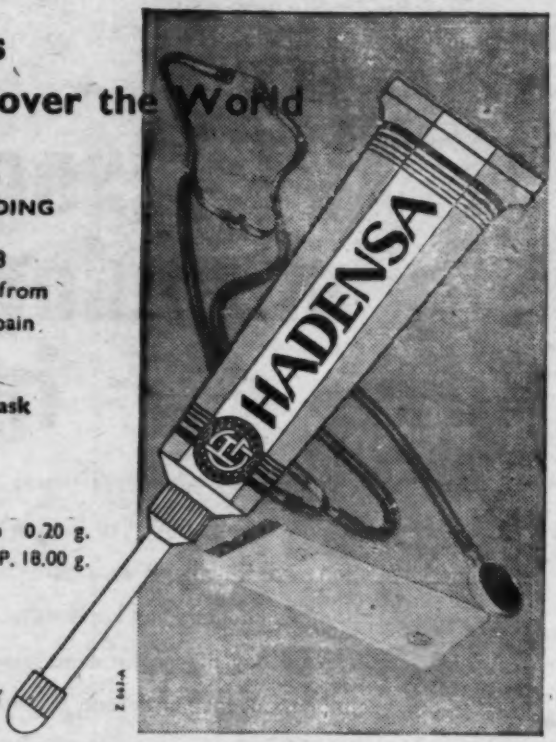

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up to 7 or 9 years. Only in exceptional circumstances an officer is denied his release after three years.

Even an SSRC officer has opportunity for Permanent Regular Commission (PRC). After completion of 2 years of service and before completion of three years he has two chances to appear for PRC, these consisting of written examination, interview and consideration of confidential reports from his Commanding Officers. Many officers are selected for PRC in this way.

I think that stay of three years in the Army does not make him out of touch with the profession, and he is in a position to join service or to start private practice, if he chooses either of them. As regards financial implications, he gets terminal gratuity and terminal leave pay which together come up to more than Rs. 3000/-. This amount, along with that he has managed to save during his service does make a reasonable amount for fresh establishment. This I state from my own experience of three years' stay in the Army, in spite of much higher standards of living there.

As regards the suggestion of selecting the officers for one year of probation period and then selecting them for PRC, there will be waste of human energy, money and training. Initially for some period, an officer receives basic military and hospital training, after which he joins his unit. At the end of one year he hardly has a real picture of army life; and the Army, in turn, has hardly made any use of him in return of the expenditure incurred by it in terms of money and training. In the three years period he is able to see both, a peace unit such as military hospital and a field unit, and has a correct view of army life. To release him after one year of service will be waste of one year of the candidate and waste of national money and training without any return.

SSRC, in my opinion, serves a good purpose. It gives military background to medicos who become an asset to the nation in emergency. To those who do not want to have army career permanently, it gives an opportunity to 'peep' into army life. Also it gives ample opportunity for Permanent Commission to those who decide so.

Those who want to join the Army permanently and take it as a career, are advised to join as DPRC officers or try sincerely for PRC even as SSRC officers. AMC should not be expected to absorb the candidates only because there is keen competition in civil life and they cannot withstand it. It should not be made 'Panjarapole' for those who cannot support their existence in civil life.

Due to overall shortage of medical officers, the Army has lowered the general standards of selection and training for AMC officers and has also given better starting to them in comparison with officers in other branches. I am, etc.

Matunga, Bombay 19 (Dr.) S. K. MEHTA
EX CAPT., AMC

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EDITOR'S NOTE :

We welcome the letter of Dr. S. K. Mehta on Short Service Commission. The Indian Medical Association in a resolution* at the All-India Medical Conference held at Indore in December 1959 urged upon the Government to absorb all Short Service Commissioned Officers in the permanent cadre and abolish the Short Service Commission. The medical officers in the army play a very important role to keep the morale of the personnel and we think our correspondent will agree to it. Our intention is far from making AMC a "Panjarapole". We are sorry, our learned correspondent unfortunately misunderstood our viewpoints.

The correspondent may be fortunate in having good savings, enough to get himself settled in life but many a released officer are not so.

To have a "peep" into army life we can never advocate for SSRC.

As in other departments of the Army we demand that there should be only one cadre and that is the permanent cadre in **AMC.**

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*Resolution No. 17—This Conference notes with concern that a large number of Short Service Commissioned Officers in the Armed Forces Medical Service are thrown out of service sometimes after 6 years or more. This is detrimental to the interest of the medical personnel concerned and to the recruitment in emergency. This Conference urges upon the Government to absorb them permanently.

The Tranquillisers

Sir, One must appreciate your annotation on "The Tranquillisers" in the November 16. 1960 issue of the Journal, but as the tranquillisers are of growing interest, it appears that there is some room for addition and alteration to your learned editorial. Below are mentioned some particulars which may be of interest :

Tranquillisers are variously named as psychotropic, phenotropic, and ataractic drugs ; as against sedatives, they should not produce diminished responsiveness to external stimuli; unlike hypnotics they will not induce sleep, further they will differ from the general anaesthetics in not making the subject unconscious and as opposed from the narcotics they will not be habit-forming. The ideal tranquilliser will put the subject back to his mental equanimity and emotional harmony, with power and efficiency of attention, concentration, thinking and judgment unimpaired. It will bring relief from mental tension and anxiety and relaxation from agitation.

In the Kalamazoo series of 119 patients, it was observed that tranquillisers produced three significant subjective changes in the mental patients. They were (1) inner calmness, (2) increased ability to think, (3) loss of sting of the painful thoughts and ideas (Schmitt, 1957). Our findings, both in the hospital and outside support the above.

The idea that the tranquillising effect of rauwolfia was discovered only recently and accidentally is not correct. "For centuries, in the form of crude extract, it has been used in India, as a calmative agent with great success" (Friend, 1958).

It is to be noted that rauwolfia preparations act after a latent period, even if injected intracardially, that

suggests that it does not act directly but probably through some of its breakdown products (Wirth, 1957). Rauwolfia not only acts as a tranquilliser, but it stimulates appetite and keeps the bowel clear. The duodenal complications, as observed with rauwolfia, are possibly due to increased secretion of hydrochloric acid, as such some antacid along with the drug may prove profitable.

You make an admission that for some unknown reason rauwolfia alkaloid aggravates existing cases of depression, but the fact is that not only rauwolfia but phenothiazines are also found to be of no use in depression (Friend, 1958), and I believe that this problem of depression can well be explained in the light of the psychodynamics of the tranquillising agents (Schmitt, 1957). It states that anxiety is a danger signal to the conscious ego and the various defences the ego may put forth against the impending danger result in psychopathological symptom formation. Once the ego is free from anxiety by the tranquilliser, the warning is removed and the dangerous impulses lying beneath the conscious level of the mind floats up on the surface. Now the ego can either grapple with these aggressive forces efficiently or the hostile forces completely everpower the ego and victimise it; this comes out in the form of depression or worsens the pre-existing depression.

Reserpine is chemically related to serotonin (5-hydroxytryptamine or 5-HT). Serotonin has recently come into prominence, it is considered to be a chemical playing a very important role in mental or neuropsychic functions. But its mode of action is still not very clearly understood. Both rauwolfia and chlorpromazine are found to be powerful antagonists of serotonin, but strangely enough the LSD-25, an experimentally psychosis-inducing drug, is also found to be a powerful serotonin antagonist. But mescaline, another psychosis-producer, is not a serotonin antagonist (Delay and Thuillier 1956). Further the urinary end-product of serotonin, i.e., 5-oxyindol acetic acid was markedly decreased after administration of chlorpromazine, whereas injection of reserpine causes an increased excretion (Sano *et al*, 1957). So the role of serotonin should be considered as uncertain. However, it is suggested that reserpine liberates serotonin, increasing its level in the C.N.S. and expelling it from the peripheral tissue (Wirth, 1957).

Sedatives and hypnotics were used to be introduced in therapy after the following animal experiments: (i) Their ability to produce characteristic sleep pattern in the E.E.G. tracings. (ii) Their ability to produce antagonistic action against strychnine. (iii) Their ability to prolong the effect of the barbiturates. But the tranquillising agents chlorpromazine and rauwolfia were not introduced in that fashion in the therapy. Berger (1957) believes that the above-named experiments would fail to pick up the tranquillisers.

Two relevant and significant experiments in connection with tranquillisers are: Firstly, tranquillisers and abolition of condition responses and secondly tranquillisers and their anticonvulsive effect. It has been observed that chlorpromazine and rauwolfia remove the condition responses specifically and selectively, whereas benactyzines, meprobamates, azacyclonal and hydroxyzine not only remove the condition responses but also diminish the uncondition or innate responses (Pfeiffer *et al*, 1957; Cook *et al*, 1958; Domino *et al*, 1958). So far as the anticonvulsive action is concerned, rauwolfia behaves contrariwise from all other tranquillisers. It facilitates drug and electroconvulsion and lowers the level of current strngth required to produce convulsion (Chen *et al*, 1957). Further, it has been observed that epileptics get worst seizures when treated with rauwolfia (Zimmermann *et al*, 1955).

Lastly, we fully endorse your timely warning against irresponsible use of these drugs. It is to be noted that tranquillisers very often make changes in mental patients which are quite unpredictable, and sometimes changes take place which are contradictory to our expectations, e.g., some patients become overactive whereas others become completely bed-ridden; some become overexpressive; others, on the contrary, become repressive; some patients become very amenable to psychotherapy, others avoid it altogether (Wolf, 1957).

Both rauwolfia and phenothiazines have been observed to produce disturbing dreams, nightmares and undesirable emotional upsurges (Pelikan *et al*, 1958). I am, etc.

Calcutta — ARUN KUMAR ROY CHOUDHURI

REFERENCES

BERGER, F.—*Ann. N. Y. Acad. Sc.*, **67**: 685, 1957.

CHEN, G., *et al*—*J. Pharmacol. & Exper. Therap.*, **119**: 559, 1957.

COOK, L., *et al*—*Ibid*, **122**: 14A, 1958.

DELAY, J. AND THUILLIER, J.—*Semaine hôp.*, Paris, **32**: Oct. 21, 1956 (quoted in the Year Book of Neurology, Psychiatry & Psychosurgery 1957-58, The Year Book Publishers, Chicago).

DOMINO, E. F.—*J Pharmacol. & Exper. Therap.*, **122**: 20A, 1958.

Editorial—*J. Indian M. A.*, **35**: 458, 1960.

FRIEND, G. D.—Tranquilliser: The Medical Clinics of North America, Sept. 1958, Boston Number, Saunders, Philadelphia & London.

PELIKAN, W. R.—The Medical Sedatives: Their Pharmacology and Use, Saunders, Philadelphia & London.

PFEIFFER, C. E.—*Ann. N. Y. Acad. Sc.*, **67**: 734, 1957.

SANO, J., *et al*—*Schweiz med. Wchnschr.*, **87**: 214, 1957.

SCHMITT, J. R.—*Psychiat. Quart.*, **31**: 17, 1957.

WIRTH, W.—*Deutsch med. Wchnschr.* **82**: 1745, 1957 (quoted in the Year Book of Neurology, Psychiatry & Psychosurgery, The Year Book Publishers, Chicago).

WOLF, S.—*Am. Psychial. & Ment. Hosp. Ser.*, Monograph 2, 1957 (quoted in the Year Book of Neurology, Psychiatry & Psychosurgery, The Year Book Publishers, Chicago).

ZIMMERMANN, F. T., *et al*—*Ann. N. Y. Acad. Sc.*, **61**: 215, 1955.

* * * *

EDITOR'S NOTE:

There are various classifications for the tranquillising drugs, and one such is based on their psychopharmaco-

logical actions. Even in this there are differences of views.

Although rauwolfia was used in India in a crude form for centuries in the treatment of psychoneurotic patients, it was only recently introduced to the Western system of medicine as an anti-hypertensive drug; and its value as a tranquilliser was appreciated and adopted in the western medicine afterwards. The real scientific study of the drug started since then.

We are glad the correspondent has tried to explain the cause of depression by rauwolfia and phenothiazine purely on their psychodynamic actions, based on the views of Schmitt (*vide* reference above), but there are others who do not agree to this view. So many papers have been published on the subject, but complete unanimity of views has not yet been agreed upon. The subject is vast and complex, the scientific study has just begun and is being actively pursued. Our knowledge is still in a fluid state, and the last word is yet to be said.

REVIEWS

The Discovery of Reflexes—By E. G. T. Liddell, D.M., F.R.S.; 1960, Clarendon Press, Oxford, Oxford University Press, Calcutta; 9⅛"×6", pp. 174; 30s. net.

The history of scientific recognition of a neurone, synapse—their structure and function, have been presented with precision and comments. Sherrington's thoughts based on facts have dominated the latter part of the author's presentation. This lucid and scientific tale proves clearly how much the author has endeavoured to collect the past and present facts from every part of the world. The basic, fundamental fabric in neurophysiology has thus been unravelled for proper understanding of how progress in science is achieved. In the reviewer's opinion, this monograph has only been possible from the hands of Prof. Liddell, who is a veteran in this subject.

P. R. Roy

Methods in Medical Research, Volume 8, Editor-in chief, R. D. Bruner; 1960, The Year Book Publishers, Inc., 200 East Illinois St, Chicago, U.S.A.; 8⅛"×5½", pp. xiv+368.

This volume deals with (i) life history of the erythrocyte, (ii) measurement of responses of involuntary muscle and (iii) peripheral blood flow measurement.

The origin, rate of formation and total mass of R. B. C. and its life-span have been thoroughly dealt with. Excretion of urobilinogen as an index of red cell destruction has been critically reviewed. The methodology and critical appraisal of such in the investigation of the 'life story' of R.B.C. are worth studying, by every research student in haematology or physiology. The suitability of red cells labelled with radioactive phosphorus, or chromium or potassium has been discussed by different authors. It is however a matter of experience for individual workers to assess the validity of the technique.

The mechanism of tone, contraction and relaxation of smooth muscles of blood vessels, and the gastro-intestinal and genito-urinary tracts are of considerable physiological interest. The authors dealing with these phenomena have presented modern views and thoughts.

Blood tissue exchange and electromechanical methods have been discussed in details in relation to peripheral blood flow measurement.

As a whole, this volume is a treatise on 'methods' available for studying physiology in certain aspects. To achieve precision in methodology is a sincere and essential desire; but, how far these precise methods can be applied to humans is a matter for the future. But still it is a very valuable addition to a reference library.

S. R. Mukherjee

Krebssyntropien ; Wahlverwandtschaften und Lokalisationsgesetze des Krebses—Hans. Grosse, Dr. med.; Mit 25 Abb. im Text. VIII, 127 Seiten. 21,5×15 cm. 1960. Steif broschiert 12,25 DM.

Cancer Syntropies : Elective Affinities and Laws of Localisation of Cancer—By Hans Grosse, 1960 (in German).

After analysing large statistical, clinical and pathological material taken from the world literature, the author comes to the conclusion that the number of cancer cases within one and the same age group remains constant and the absolute increase is due only to the increased number of people who reach a higher age. The supposed protective effect against cancer of atherosclerosis, diabetes, silicosis, tuberculosis, syphilis, peptic ulcer, renal diseases, etc., is, according to the author, due only to their life-shortening effect which prevents people from reaching the cancer age; therefore, bleeding peptic ulcer, aortic aneurysm and myocardial infarction 'protect' better than the more harmless manifestations of similar pathological processes. Cancer is due to the combined effect of 'endogenous basis probability' and an exogenous factor that determines the localisation. The author is convinced that the former is so dominant that even surgical removal of an ulcer or a stone bladder will prevent only the local cancer, but not the predetermined malignancy of a different organ. The more lung cancers develop due to smoking and air pollution the less will appear in other localisations; instead of all the penis and cervix cancers which compulsory circumcision would prevent an equal number of cancers would develop somewhere else; sexual abstinence would prevent cervix cancers but those of mamma, stomach, etc., would increase proportionately, keeping the sum total constant, as the endogenous factor cannot be suppressed, according to the principle of Lechatelier. Cirrhosis, cholelithiasis, xeroderma pigmentosum, intestinal polyposis are strongly predisposing to cancer and, therefore, called pre-existent cancer syntropies. Eleven pages of references witness the author's serious attempts to put his theories on a firm basis. Some good photographs enliven the text.

Robert Heilig

Physiologie und Klinik der Bluttransfusion—Prof. Horst Möller, Dr. med. 2., neu bearbeitete und erweiterte Auflage. Mit einem Geleitwort von Prof. Dr. med., Dr. h. c., Dr. h. c. Theodor Brugsch, Berlin. Mit 48 Abb. im Text. XI, 328 Seiten. 24×17 cm. 1960. Halbleinen 28,15 DM.

Physiology and Clinic of Blood Transfusion—Prof. Horst Möller, 2nd revised and enlarged ed., 1960. Foreword by Prof. Theodor Brugsch (in German).

Based on the experience of 10 years and thousands of blood transfusions carried out at the 1st Medical Clinic of the Charité Hospital, Berlin, the author is giving here a complete survey of his subject. Chapters on history; the donor and the blood groups are followed by a section on transfusion technique that deals with direct and indirect fresh transfusion, open and closed system, intravenous, intra-arterial, intra-aortic, intra-cardiac, intra-osseous, intra-peritoneal and a few still rarer transfusion techniques, with exchange, placental blood, corpse blood and back transfusion. Particularly successful is the part dealing with the physiological effects of transfusion. Clear and detailed are the directions for blood conservation; plasma transfusion and conservation; plasma fractionisation; transfusion and conservation of r.b.c., leucocytes and thrombocytes; blood substitutes. 34 pages are devoted to transfusion reactions, 50 to indications and the last 10 to organisation. Truly impressive is the list of references covering 40 pages; chapterwise in alphabetical order we find the pertinent literature of 300 years, from 1665 to 1959, in many languages, an inexhaustible mine of information for those interested in the subject. This beautifully produced work ranks with the best of the many good books on blood transfusion.

ROBERT HEILIG

The Principles and Practice of Medicine—By Sir Stanley Davidson, B.A., M.D., F.R.C.P., F.R.S. and the present and past staff of the department of medicine, University of Edinburgh and associated clinical units; Fifth edition, 1960; E. & S. Livingstone Ltd., London and Edinburgh; 5¼"×8½", pp. xii+1112, with 73 text figures and 7 plates; 35sh. net.

Professor Davidson's Medicine, written with the help of 16 contributors, all from Edinburgh, is primarily intended for students and practitioners of medicine. It has gone through five editions and four reprints in course of eight years and has been translated into Spanish. The popularity of the book is due mainly to the lucid style and practical presentation of the subject matter. The diseases described are those most commonly encountered in general practice. A very welcome feature is that each section starts with a discussion of the anatomy and physiology of the system concerned. This is a very rational approach to the proper understanding of the symptomatology and treatment. The book is essentially practical. The fifth edition has been completely revised and brought uptodate. The appendices contain eight diet schedules for different pathological conditions, a standard height and weight table and useful data including normal values for some blood constituents. There is a selected list of references at the end of each section.

The teaching advocated in the volume is sound and authoritative and represents mainly the Edinburgh school of medicine. While maintaining a balanced style and composition the volume reflects the diversity and depth of knowledge and experience of a large number of clinicians and teachers. This is perhaps another reason for the success of the book which can be recommended to students and practitioners of medicine in India.

J. DHAR

Modern Treatment Yearbook, 1960—Edited by Sir Cecil Wakeley, BT., K.B.E., C.B., LL.D., M.CH., D.SC., F.R.C.S., F.R.S.E., F.A.C.S., F.R.A.C.S.; 26th annual edition, 1960; The Medical Press and Baillière Tindall & Cox, London; 5⅛"×8⅛", pp. x+310, illustrated with 32 plates (60 figures); 35sh. net.

The volume contains 32 selected articles which were originally published in the *Medical Press* under the caption 'Modern Treatment'. These clinical articles contain a wealth of useful information on current practices in therapy. They cover a wide field of medical science, including the specialities. These refresher articles are fairly comprehensive and maintain a high standard. It is difficult for a general practitioner to wade through the vast literature on new forms of medical treatments and surgical techniques. This Yearbook is intended to focus his attention on accepted modern practices and recent advances. The G. P. will find the volume indispensable.

J. DHAR

Essentials of Medicine : The Art and the Science of Medical Nursing—By Charles Phillips Emerson Jr., A.B., M.D. and Jane Sherburn Bragdon, R.N., B.S., M.ED.; 18th edition, 1959; Pitman Medical Publishing Co. Ltd., London; 5¾"×9", pp. xvi+857, with 233 illustrations, including 8 plates in colour; 55sh. net.

The 18th edition of the *Essentials of Medicine* is a comprehensive textbook of medical nursing. It comprises 44 chapters which are presented in 16 units and 3 parts. Part 1 has 25 chapters and 6 units, and deals with the fundamentals of medical nursing, such as the roles and responsibilities of the medical nurse; clinical study, mental status and care of the patient; conditioning factors in nursing and nursing in communicable diseases. Chapter 5 is devoted to technical aids in clinical evaluation and deals with various clinical laboratory tests. There is a master table giving sample specifications and normal values for individual laboratory tests. Part 2 has 22 chapters and 9 units, and deals with the nursing care of patients with specific medical problems, such as nursing care in specific systemic diseases. Part 3 has one chapter and one unit, and deals with nursing disaster or emergencies. There is an excellent glossary of the combining forms and prefixes and suffixes used in making medical terms.

The subject-matter of the book has been dealt with very systematically and the motif of the text is the patient and not the disease. These comprehensive patient-centred discussions will serve the purpose of a source book of reliable information and factual data collected in convenient form for better nursing care of medical patients. This is a highly useful book for the nursing profession. The get-up is commendable.

J. DHAR

SUPPLEMENT
Journal of the Indian Medical Association

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XI M.P. STATE MEDICAL CONFERENCE, RAIPUR, 1960

The 11th M. P. State Medical Conference was held at Raipur under the auspices of Raipur branch of IMA, on October 8-10, 1960. The venue selected was the auditorium of the College of Science, Raipur.

The chairman of the Reception Committee was Dr. H. B. Lall. Shri H. V. Pataskar, Rajyapal of Madhya Pradesh inaugurated the conference and Dr. G. S. Wagle presided over it.

Welcoming the Rajyapal and the delegates Dr. H. B. Lall brought out the following points in his short speech : (1) The humanitarian role of the doctors in their approach to the problems of the patient, (2) The necessity of taking legislative steps to root out the ghost of quackery to which the poor patients are victims, (3) Increasing the membership strength of the Association.

Dr. Lall then requested Shri H. V. Pataskar, the Rajyapal to inaugurate the conference. Shri Pataskar in his inaugural address referred to the various systems of medicine and advocated correlation of Allopathy with Ayurveda to serve the cause of human welfare. He spoke on the necessity of hospitals and dispensaries in the State and the scarcity of doctors to man them. He drew attention of all to the rural areas which still continued to be inadequately provided with medical aid.

Dr. G. S. Wagle, the president of the conference in his address said :

"The object of the All-India Medical Association are [1] to promote and advance medical and allied science in all their different branches and to promote public health and medical education in India. [2] to maintain the honour and dignity and to uphold the interest of the medical profession and to promote co-operation amongst the members thereof. [3] and to work for the abolition of compartmentalism in medical education, medical services and registration in the country and thus to achieve equality among all members of the profession.

Now to achieve these laudable objects we have to work hard in different departments which set difficult problems before us. These problems are (1) of medical men either in private practice or in services. (2) of paramedical branches as nurses, compounders, laboratory and other technicians, (3) of public health either in rural areas, or in urban areas and (4) of medical education.

These are the fields in which any medical association has to work, may it be All India Medical Association, State Medical Association, or a local Branch. These are our responsibilities and in shouldering these we have to face day to day problems which are many and varied. We have to learn to tackle them boldly yet tactfully, sternly yet humanly, with a strong hand and yet with a kind heart, intelligently and yet honestly, so that the interest, the honour and the dignity of the medical pro-

DR. H. B. LALL, CHAIRMAN, RECEPTION COMMITTEE, M. P. STATE CONFERENCE

DR. H. B. LALL DELIVERING HIS WELCOME ADDRESS.
Seated : (L-R) DR. J. C. SUCHDEV, DEAN, MEDICAL COLLEGE, JABALPUR ; SRI H. V. PATASKAR, RAJYAPAL, MADHYA PRADESH ; DR. G. S. WAGLE, DR. D. K. DANI, ORGANISING SECRETARY, M. P. STATE CONFERENCE

DR. G. S. WAGLE, PRESIDENT, M. P. BRANCH, PRESIDENT, M. P. STATE CONFERENCE

fession is maintained and the cause of the suffering humanity is also served. In our attempts at professional progress let us not forget the patient, in our pursuit of medical science let us not forget the suffering humanity; in our planning let us not forget the people in whose interest we would be working. Let us plan, develop and organise in such a way that we as well as our greatest trust the human life are enabled to work well, earn well and live well.

The patient and the physician have interdependent existence. So when we confer and deliberate to-day, tomorrow and day after, let us think in terms of the interest of the both and arrive at such conclusions as would, not only help us both, but will automatically help the nation in building up a healthy, happy and contented race. We are passing through a critical period of nation building. The coming seven years set a peculiar problem before us of "Now or Never". Whatever difficulties, whatever vicissitude, whatever suffering and hardships we may have to face, let us go through them cheerfully tightening up our belts, ungrudgingly. Just for a period of seven years to come, let us, medical men, show our preparedness to go through the hardships, that our nation may be built up and that it may have dignity and honour in the comity of nations. Then it will stand on its legs and then alone we shall be able to say proudly that the medical men of India played their part so well With a view to achieve this stature and status in the world, let us, medical men of India decide to remain contended and calm with whatever we are getting, whether in Government service or in private practice and with howsoever high taxes we may have to pay to the Nation for building up its resources. Let us display the energy to serve the suffering humanity either in urban or rural areas with a determination to build up a healthy race that will build up a great Nation. Today I am not going to promise you that I shall fight for your demands of increase in salaries or increase in amenities that may enable you to live in luxury. But I would here like to appeal to you medical men not only of M. P. but of all India to tighten up your belts, go through the privations for the coming seven years and strengthen the hands of your leaders who are shaping the destiny of our country. There is no promise of immediate rosy future. On the contrary there is the expectation of greater sacrifice from individuals, from associations and from all the peoples whatever their profession or vocation. I am sure you will all agree, to go through this ordeal willingly for a limited period only. Your demands for higher pay; your demands for better and higher standard of living, your expectations of living a life of luxury however justified they may be, yet in the context of the hard and emergent times our nation is going through, I at least will not press for their fulfilment just yet. Let us all put our shoulders to the task of building up our Nation by working hard, by toiling hard, by devoting all, to our noble work of healing in the cities and in the villages. Honesty in profession and high sense of integrity in our practice will automatically bring dignity and respect that this profession richly deserves. Heredity has enjoined on us to observe high ethical standards; building them up during our life time let us leave to the posterity such high standards as would enable them to live up to the Hippocrates Oath.

Now I would like to deal with our internal and external problems in relation to the Medical Association :

Our Branches and the Membership

Last year we inherited 32 branches in the M. P. State. This year we have been able to add 4 more branches at Shivpuri, Shajapur, Bhilai and Vidisha, the total being now 36, with a total membership of all the branches standing at 987. Rough estimates of the number of qualified medical men in Madhya Pradesh is about 8000. You can see that we have only ¼ of this number on our register. During my visits to the branches in the state, I found that in cities the Government service personnel was much less represented on our ,Association particularly the medical colleges and the hospital staff. Reverse is the case in the district places. The House Surgeons, the Demonstrators, the R. M. O.'s, the R. S. O.'s and at some places even the Professors, Readers and Lecturers are not our members. The reasons for this I think is that each specialised branch has its own all-India association and therefore many of them think that it is an additional financial burden to become the members of the I. M. A. My suggestion to the Indian Medical Association is, that at all-India level this point be taken up and the different specialist organisations be made Association members with per capita contribution through each such Association. This will enable us to have more members and we shall thus be a real representative body.

Medical Council

Each State in India has a Medical Council, and each State through it is represented on the Indian Medical Council. Our M. P. State, has not as yet formed a unified Medical Council, as such we lose two seats on the Central Council. In this connection I met the Director of Health Services and also the Health Secretary. I was told that draft proposals of the Medical Council Bill have gone to the Law Department and in course of time after going through proper procedure the Act will come into force. At its introduction level it will be published for obtaining public opinion. The Medical Council sub-committee appointed for this purpose by our Provincial Council has suggested certain items in the Act. These are being sent to the Health Secretary. I hope this M. P. Medical Council, comes into being soon.

The Medical Associations in the foreign countries like Britain, U. S. A., Canada and Germany are so strong that they control the medical education, control the hospitals and colleges and also do the registration of the medical practitioners. No medical man can practise in those countries without registering with their Association. When I was in U. S. A. in 1955, I went to a chemist's shop to buy a few pills of sulphaguanidine and entero-vioform. I wrote a prescription on my own letter head but it was not honoured only because I did not hold the registration of American Medical Association. I had to go to a registered medical practitioner, get a desired prescription and then only I could get the required medicine. I wish and hope that one day even our Indian Medical Association would be as strong, united and as effective as its counterparts in the foreign countries. In a democratic set up of our country these matters have got to be followed up and pressed home through our legislatures. We must make a strong and a good case, create public opinion in its favour and then push it through our local legislatures.

Service Class and Private Practitioners

There is not that aloofness between these two classes as was seen in pre-independence days. To-day there is better understanding and mutual goodwill amongst the medical men in whatever category they are working. Barring some individual characters I find that the Government Service personnel have given up their high stuck up attitude and have started to run level with others in the same profession. I had two specific complaints from our members in Government Services. (1) That they received less salary than the ones in the Central Government Services though they were doing the same kind of job, and the other (2) that the top grade say of the D. M. O.'s cadre would be at most Rs. 800/- while his counterpart in District, the Collector, D. F. O. or District Engineer has prospect of rising to Rs. 1,500/-. Added to these there were many other small complaints like scarcity of Government quarters in the districts and the high rate of rents they had to pay for their meagre

salaries; in some parts of M. P. State private practice was allowed, in other parts hospital paying practice was allowed and in other parts no private practice was allowed. The general complaint was of lack of uniformity. One peculiar thing I have noticed not only with medical men in services, but with all service class, may be in Government Service, Railway Service or even in private sector, nobody ever complained that what he or she was getting was insufficient, but he or she was unhappy that others were getting higher pay. Everyone wants the higher standard of living; everyone expects a uniform way of living. For this discontent and for these high expectations I think our ideal of socialistic pattern of society is to be blamed. I have only explained to you what I have observed and have stated the facts.

Medical Education

This is one of our responsibilities. In my last year's address to this conference I have stated that the standard of English language being low and as our teaching and technical books are in high flowing English, the standard of medical education is going down. This is ineivtable till the medical books are written in our language and till we begin to teach our students in the local languages. In the present circumstances however if we want our younger medical men to bring out something original and to make contribution to research, let us give them opportunities to work a lot in the laboratories, do plenty of experimental work and to set them thinking, what? why? and where?

This will bring out the best among the talented students and will lead to the development of better tendency in research work.

As I am touching on this problem of medical education I would like to mention the rush for admissions in the four medical colleges we have in the State; and the difficulties they come across in admitting the students. It would have been better if admissions to these colleges were left to the committee of the Principals with a set policy to admit students on merit. But reserving a particular percentage of admissions for political sufferers' children gives rise to great dissatisfaction and discontent. How long are we going to perpetuate this bogey of political sufferers which is undermining the morale of the body politic everywhere. It is high time that this scope for favouritism is dropped at least from the teaching institutions. The State Government or the Central Government can dole out pensions and gratuities, but they should not interfere with the teaching institutions where we want better traditions to be established and where we want better discipline to be inculcated among the student world. The problem of admissions to the schools and colleges are the creation of the Governments and if it is a headache to them, they have to thank themselves for it.

Compartmentalism in Medical Profession

The Indian Medical Association has been striving hard to eliminate this virus. It has succeeded in some ways; but it has yet to work hard to achieve this goal. In the medical profession in India I would like to suggest that we should have just one scientific system of medicine; call it by whatever name you like. Let there be one common standard of medical education incorporating all the best, from all the different Pathies.

Training Facilities for Para-Medical Services

Schools and colleges for training of nurses are being opened by our Government and gradually the number is increasing. This scarcity can never be made good in just a year or two. It is a long affair of years to come. I would like to suggest to the authorities that be, that the living and boarding arrangements of the nurses in these training institutions should be improved. During my tours in visiting our branches I saw at places ten undertraining nurses and midwives were huddled up in a room hardly 12′×14′. There is a necessity of opening more training centres for compounders, laboratory and x-ray technicians. These are essential branches which need equally good attention if we want our hospitals to render medical aid to people as is desired.

Quackery

This is an age-old problem which is getting acute and acute every day in our State. Wherever I have gone during my tours I have had to listen to this woeful tale of, any and sundry taking a hypodermic syringe, some antibiotics, some sulpha tablets, go about visiting villages on their bicycles and irrespective of any indications go on injecting people and giving sulpha drugs. In the long run this will undermine the public health for which none else but the Government will receive the blame. If the "Ma Bap Sarkar" thinks that the quackery directly or indirectly helps them solve their population problem, it is a different matter. But I as a medical man feel that it is increasing with such appalling rate that it needs to be curbed with strong anti-quackery laws. Beware in time or it might be too late. I hear that the anti-quackery law is being sent by the Centre to the States, it being a State subject. My dear brothers in profession, let me strike here a note of warning to you, whatever be the competition, howsoever unhealthy it may be, let us not stoop that low and let us not allow our ethical standards to go down. Let us be humane in our treatments to our patients. Leave that aloofness which kept us away from our own people. You will easily fight quackery and competition.

Urban Medical Practitioner

The cities are getting packed with doctors and as such there is not that lucrative practice for all as was in the past. Even as a virtue of necessity may I suggest that the starving medical practitioners from cities should migrate to smaller country towns and serve not only the community of that town but also visit the villages in the surrounding area. You may not get all the city amenities there but you will definitely get enough money to live well. A village is a better paymaster and yet is more grateful to the treating doctor than a citizen. If you want a tip from me let me tell you that there is more money in villages to-day than in the cities. Only you have to have a little more spirit of adventure in addition to the spirit of service. If you prefer to live in cities at least go to the villages for practice and beat the quack out of his mean game.

Medical Help in Rural Areas

In my last year's address I have suggested lend and lease system of dispensaries which would induce a young medical graduate to go to remote villages and settle there; the Government would be able to retrieve all the money it would invest. I would like to reiterate the same scheme. Let the Government try it. Last year I was told that there were about 400 rural dispensaries which did not have any qualified doctors, and this year the number of such dispensaries is authoritatively said to be 200. This means there has been a very good progress. If in one year they could get 200 doctors to man the rural dispensaries, it shows that there is an increasing tendency on the part of the medical graduates to go to the villages. If this is to be believed we shall have no rural medical problem left in Madhya Pradesh State in another four years.

In the present circumstances of dearth of medical men in rural areas I have begun to believe that systematically organised medical relief camps such as Eye Camps, Surgical Camps, and Medical Camps are a great necessity. I was against this Camps idea, till recently when I organised an Eye Camp at Kannod. In ten days

1000 consultations and 250 operations were done by me and my helping friends. During this time I realised what appalling ignorance prevails among our village folks regarding their personal hygiene. Most of their diseases were due to ignorance and due to neglect; Added to this was their poverty and their inability to travel to distant cities for medical and surgical help. It is therefore our duty to reach such help to the door of the villager by organising such camps either by medical associations or by Government. Monetary help comes automatically for such a cause; only an organiser is neededपात्रकः तत्र दुर्लभः । The eye camp I have mentioned was financed partially by a sanyasi who could collect about Rs. 80,000/- from the villages in that area for some religious purpose; out of which he was persuaded to spend about Rs. 5,000/- on the eye camp. So you can see that money is no consideration. Only there should be the will to serve and the way will be there. If every branch means to do something on this line it will not only give relief to the villagers but will relieve the Government of its headache to a great extent."

A variety entertainment was arranged and was very much appreciated by the delegates and visitors. The Scientific Section was inaugurated by Dr. J. C. Suchdev, Dean of the Medical College, Jabalpur. About 100 doctors took part in the scientific discussions. The delegates were taken round the Bhilai Steel Project, 18 miles from Raipur. It was decided that the next conference of the M. P. State Branch would be held at Gwalior in 1961.

The following resolutions were passed at the conference.

1. This Conference places on record its deep sense of sorrow at the sad death of the following members of Association and convey its heartfelt sympathies to the members of the bereaved families :

1. Col. S. L. Garge, Gwalior, 2. Dr. Marathe, Gwalior, 3. Dr. Miss B. Malik, Jabalpur and 4. Dr. L. N. Dubey, Hoshangabad.

2. This conference further recommends to the Government that as a first step towards the eradication of quackery in the country the Government should enact proper legislation to prevent any medical practitioner registered or otherwise from advertising himself in any lay press or in any other form.

3. This conference recommends to the Government that they should ask every registered practitioner to write and prefix the system in which he is registered so that the lay people and chemists may easily differentiate them.

Further resolved that a code of medical ethics be drawn for each of them and that Government should see that it is enforced.

4. This conference draws the attention of the M. P. Government towards the percentage of the total revenue that the West Bengal Government spends over the health of the State, and requests that the Government should spend about the same percentage in our State also.

Further resolved that the Government be requested to consult the Indian Medical Association, M. P. State Branch in all matters relating to selection and implementation of the scheme affecting the health of the State in the third Five Year Plan.

5. In view of the fact that as many as 150 hospitals and dispensaries in the province are without any doctors, this conference requests the State Government to revise the pay scales of the Medical Services immediately. The scales of the Provincial Medical Services should be raised as per recommendations of the Indian Medical Association.

Resolved that the pay scales of staff of Medical Colleges of the province is probably lowest in India and in view of that it should be revised as per recommendation of the Indian Medical Association.

6. Resolved that as the new province of Madhya Pradesh has come into existence in 1956 and it is high time that a proper M. P. Medical Council is established here. Existing medical councils should be abolished and fully integrated and properly constituted. New Medical Council comprising the entire province should be made immediately. Those members who are already registered in the previous councils of the integrated states should be admitted to this New Madhya Pradesh Medical Council without payment of any extra charge.

SILVER JUBILEE SESSION
U. P. STATE MEDICAL CONFERENCE, VARANASI, 1960

The 25th U. P. State Medical Conference was held at Varanasi on October 22-23, 1960.

As this was the 25th Medical Conference of the State I.M.A., it was celebrated as the Silver Jubilee Session of the Conference.

Dr. B. N. Bhalla presided over the Conference. Dr. B. Mukherji was to inaugurate it, but as he could not be personally present, his address was circulated to the members. Dr. S. Nath was the Chairman of the Reception Committee and Dr. B. R. T. Thukral was the Organising Secretary.

Dr. S. Nath accorded a hearty welcome to the guests and delegates. In his speech he gave a history of the growth and progress of the Benaras Branch of I.M.A. He stressed on the enrolment of more and more members from amongst the registered medical profession, because, as he said, "We should have a united voice of the Indian Medical profession to assist our own National Government in Planning Medical Education and medical relief for the country". He also appealed for a collaboration between the I.M.A. and the various associations of specialists, so as to enable the profession to place before the government and the public a consolidated opinion in all matters of medical study and relief.

Dr. B. Mukerji's inaugural address had a discussion of the progress of modern medicine and medical research. Dr. Mukerji also referred to the achievement so far attained in medical research. He emphasised "the need for search and research in the whole field of medicine including indigenous medicine so that our profession may continue to remain virile and creative for many more years to come".

Dr. B. N. Bhalla in his presidential address said among other things the following :

"The enjoyment of the highest attainable standards of health is one of the fundamental rights of every human being, without distinction of race, religion, political belief, economic or social condition.

The extension to all people of the benefits of the medical, psychological and related knowledge is essential to the fullest attainment of health.

The Government have a responsibility for the health of their people, which can be fulfilled only by the provisions of adequate health and social measures.

GENESIS OF HEALTH PLANS

The principles of medical relief in our country were laid by the All India Medical Conference at its Patna Session as under :

That this Conference is of opinion that as each individual in this country has a right to obtain every type of medical service, preventive and curative, general and specialist, domiciliary and institutional, the State as well as various parties in the country should devise ways and means to secure the same for him at an early date. This Conference also urges upon the Indian Medical Association, which must play an essential part in the preparation of what is the most important charter of health ever conceived for this nation to render every

DR. S. NATH
CHAIRMAN, RECEPTION COMMITTEE

DR. B. N. BHALLA
PRESIDENT

DR. B. R. THUKRAL
ORGANISING SECRETARY

assistance in their power towards the evolution and fruition of such schemes.

In drawing up a health plan certain primary conditions essential for healthful living must in the first place be ensured—suitable housing, sanitary surroundings and a safe drinking water supply are the pre-requisites of a healthy life. The provisions of adequate health protection to all covering both its curative and preventive aspects, irrespective of their ability to pay for it, the improvement of nutritional standards, qualitatively and quantitatively and elimination of unemployment call for our urgent attention. Nor can man live by bread alone. A vigorous and healthy community life in its many aspects must be suitably catered for. Recreation, mental and physical, plays a large part in building up the conditions favourable to sound individual and family health, and must receive serious consideration; and further no lasting improvement of public health can be achieved without arousing the living interest and enlisting the practical cooperation of the people themselves.

THE FIVE YEAR PLANS

In the Second Five Year Plan Rs. 225 crores was allotted and some improvements have taken place, some advances have been made as compared to previous years. The Second Five Year Plan has accomplished the following :

A Medical College has been established at Kanpur. There have been extensions and improvements in Medical Colleges at Lucknow and Agra and in the Dental Colleges, the numbers of nurses, midwives and dais have increased; hospitals have been up-graded; E. I. Scheme has been extended which now includes family members of the labour classes. 150 Primary Health Centres have been opened. All types of specialist services are available at divisional headquarters, District Hospitals at eight places have been up-graded, in nineteen District Hospitals specialists to undertake medical and surgical work separately have been provided, 26 new Women Hospitals have been opened and 6 have been provincialised. The effect has been that the death rate has decreased from 15·6 to 8·6 and infant mortality has also appreciably gone down. There has been decrease in incidents of certain infectious and preventive diseases.

Inspite of the above improvements our State is spending much less on medical relief as compared to other States and is also behind the all India average, both with regard to the number of beds and that of doctors compared to population ratio, and is admittedly much below the standard suggested by the Bhore Committee. A large part of rural areas have yet to be provided with hospitals and other health facilities.

The Third Five Year Plan : Rupees 300 crores have been provided for Medical and Health Services against the total outlay of Rupees 6,000 crores, i.e., only 5 per cent of the total outlay will be spent on health, whereas the Central Council of Health has recommended 10 per cent and the Indian Medical Association had suggested 15 per cent. Taking into consideration the enormous work to be done in the Health Departments, it is imperative to raise the Health Budget to 15 per cent of the total outlay, if we want to improve the health of our nation to an appreciable extent and to bring the mortality rate still further down. It will not be possible for me to go over the plan in detail, but I will like to take up some of the important points.

Health Programmes in the Third Five Year Plan may be broadly divided into six groups :

1. Improvement of environmental hygiene, special rural and urban water supply.
2. Effective control of communicable diseases.
3. Provision of adequate institutional facilities to serve as a base for organising Health Services.
4. Provision of facilities for training of Medical and Health personnel.
5. Family Planning.
6. Public Health Services, including maternal, child welfare, health education and nutrition.

Since some of the rural areas are still without hospitals and health facilities, the programme in the Third Five Year Plan should include establishment of more primary health centres and rural hospitals, provision for laboratory and institutional facilities necessary for proper diagnosis and treatment should also be made in as many places as possible and the existing district hospitals should be equipped for specialists treatments. It is also necessary to increase the number of medical officers in the existing hospitals to cope with the increased volume of work in all the departments of the hospitals and thus meet the demand of the fast growing number of patients in every hospital.

MEDICAL RELIEF

Medical relief in rural areas is the burning topic of the day. In Uttar Pradesh the rural population is about 6 crores 50 lacs, forming 86·4 per cent of the total population. Therefore the problem of medical relief is really the problem of rural medical relief on the lines of primary health centres.

There has been an inordinate delay in augmenting the primary health centres to the requisite number. There was a target of 56 centres for the year 1959-60 and 72 during the last year of the Second Five Year Plan. The main difficulty in working of the scheme has been the acute shortage of trained health visitors and midwives. Even a large number of those already opened have no doctors to look after them. The reason given by the Government is that 'doctors are unwilling to serve in the villages'. The slogan carries no conviction and has been repeatedly exploded and can deceive nobody.

Doctor has the longest and most tedious course of study before he gets a minimum qualification of M.B., B.S. But his pay-scale is very low as compared to other upper Government services. He is being recruited on a salary of Rs. 200/- a month. It is simply absurd to pay him so poorly and then to expect him to go to rural areas where there are no amenities of life, not even a proper house to live in and no facilities for the education of his children. The only way of attracting medical men and women, as Pt. Jawahar Lal Nehru said at the last Meerut Conference of the I.M.A., is to give them decent pay and conditions of service and other amenities of life. Therefore, I would strongly recommend that doctor's scale of pay should start from Rs. 350/- per month and then you will find a number of doctors coming forward to service the country in the rural areas.

The Government must be knowing that the Universities of Lucknow and Agra have made it obligatory on every student entering medical college to give an undertaking to serve the Government for at least two years. As there is an acute shortage of doctors going to rural areas, the Government should have taken advantage of this undertaking and drafted the required number of doctors for manning those dispensaries. The Government seems to be unaware of this fact, though the students still have to give those undertakings. Those who are admitted on rural tickets, must be made to serve there. It is surprising that the services of these medical graduates coming out of the colleges have not so far been requisitioned. These youngmen with more vigour and health and least encumbrances can very well serve in the rural areas for at least two years. But they must also be paid liberal rural emoluments.

Government retires its medical officers at the age of 58 and a large number of them start private practice and continue with vigour for a number of years. They are old, experienced and possess self-confidence. Their children are grown up and generally settled in life. Their approach to life is more allied to "Van Prastha" life of Hindu philosophy and they can be easily persuaded to settle in rural areas at least for the interim period, if the Government is prepared to offer them sufficient allowances.

I would also suggest to many of our young graduates, coming out of the colleges, to settle down in the rural areas, such as the big tehsils, where I hope they will be much better off economically in a few years time than to compete in the urban areas where they find the profession already over-crowded.

At present there is a primary health centre for a population of 66,000 covering an area of 100 square miles. This places a heavy burden on the doctor and he is overworked. This load should be decreased by reducing the area and population. I would suggest they should be in the radius of 25 square miles for a population of 20,000. These doctors besides, have to do a lot of clerical work, which leave very little time for professional work.

Health and medical staff of the primary health centre should be placed under administrative control of the Medical Officer. Jeep should be provided for the health work in their areas. The doctor should not be put under B. D. Os, much less in the absence of B. D. Os under their own staff, i.e. Sanitary Inspectors.

Hospital facilities. The position is still bad. There were about 1170 institutions of allopathic system in Uttar Pradesh in 1956. Out of these, 452 are in the urban area and 718 in the rural areas. By the end of Second Plan period 645 more units are to be added. There will be about 17,700 beds by the end of 2nd plan, so there shall be one bed for 3900, while there should have been one bed for 1000 at the end of the Second Five Year Plan. In England there are 7·14 beds, in the United States 10·48 beds per 1000. Indian conditions require even more beds, as the sickness statistics is about 25 per cent of the population. In the Third Five Year Plan it is envisaged to increase beds in the hospitals by 6,000. Then there will be one bed for 2765 persons. Therefore I would strongly suggest that the bed should be increased further and the existing hospital facilities at the District and Tehsil levels be up-graded.

I am glad to know that a polio clinic will be established for the treatment and rehabilitation of crippled children with 100 beds in Kanpur Medical College. It has been urgently required for a long time in our State.

There should be a secondary unit at each subdivisional headquarter with facilities for indoor treatment and district headquarter hospitals, where facilities for specialised services should be available. The post of Civil Surgeon should be abolished and there should be District Administrative Officer incharge of both the Medical and Health Services. He should possess both medical and public health qualifications. The Police Surgeon can look after the medico-legal work and the specialists of various subjects will look after their departments under the supervision of District Administrative Officer.

For a population of 6,32,15,742 (1951) in Uttar Pradesh there were 7057 registered doctors. This works out to one doctor for 8957 population, whereas there should be one doctor for 2000 according to the Bhore Committee Recommendation. The number of doctors at the Second Five Year Plan would be about 8000. U. P. intends to increase it to 9380 at the end of the Third Five Year Plan. Even then there would be a doctor for 6739 population. Definitely we require more doctors and more medical colleges. So we welcome the establishment of the Medical College at Varanasi and I hope two more would be opened in the next Five Year Plan.

By all means produce more and more doctors, but earmark enough funds to provide them with work. Do not create under-employment. The present strength of our State cadre is 1355 and while the number of doctors available per year will be about 400. I, therefore, urge upon the Government that any new extension in medical education in our State must be done after due consideration of a very important decision regarding employment of graduates on proper emoluments who come out from these medical colleges.

Position of Nurses is even worse. There are about 1900 nurses in 1960. This works to one nurse for about 34,000 whereas there should be one nurse for 300 of the population. Intensive and extensive propaganda should be undertaken by the authority to induce girls taking up nursing profession. Leaders of the public opinion should try to induce womenfolk to join the profession and the Government to provide facilities of training at every district headquarter or other well-established hospitals. Suitable scholarships be given to deserving candidates and their pay scale should be revised, service conditions for nurses, for example permission to live with families, as little transfers as possible, no handicap for married girls, should be improved. We are glad to know that a college of nursing will be established at Lucknow with the help of the Rockfeller Foundation.

Employees State Insurance

Medical Association pointed out 18 years ago the necessity of a National Health Scheme. After years of consideration Government launched the first National

Health Scheme in 1952 as E.S.I. Scheme. It was a correct decision by the Government though late and I.M.A. welcomes it. But we regret to note that the scheme in U. P. does not give the worker a right to select his own doctor. Thus disturbing the age-old doctor-patient relation, which will continue to be a source of lack of confidence in a doctor. The I.M.A. therefore always advocated that these health schemes should be run on panel system, as is being done in Calcutta, Bombay and Ahmedabad. In big towns like Kanpur, where the scheme covers the largest number of workers, there are quite a large number of private doctors, who can easily be entrusted with this work and run the scheme on panel system.

I would further appeal to members of my profession who are in private practice to formulate and run medical health schemes for the middle class families, because it is the only solution for the under-employment or sub-employment that faces the medical men today. These schemes should draw young doctors to take to private practice and show their worth by hard and honest work. I am sure these schemes can be very popular once they are adopted by the public. The Government should also come forward with help. Kanpur Medical Association has already submitted a comprehensive scheme for consideration by the State Working Committee. All such schemes can in the end form the basis of a broad-based National Health Scheme.

Preventive Medicine

There has been an improvement in the health conditions. The longevity of life has increased. The death rate has decreased. The incidence of communicable diseases has gone done. But a lot of work has still to be done to come to the desired level. Malaria eradication programme has been to a great extent a success but filaria is still rampant. As the problem of both the diseases is the destruction of the mosquitoes, it will be better to join the two programmes into one and carry on the same.

Smallpox. It is heartening that intensive drive against the smallpox is being proposed. So far emphasis has been on the school-going children, and they have secondary vaccinations but a large number of infants were not vaccinated during the most susceptible periods of their lives. During the intensive compaign greater emphasis should be paid to the primary vaccination among infants, as we see in our daily practice that the death rate is the highest among those who have not been vaccinated even once.

Tuberculosis. With the advent of antibiotics and the chemotherapy, sanitorium therapy has lost much of its importance and domiciliary therapy is getting more popular. It is, therefore, necessary that tubercular centres should be opened at all district headquarters, where facilities for mass radiography be made available.

I am sorry to say that in a town like Kanpur, where the incidence of T.B. is highest, there is no arrangement for mass radiology as yet.

We should now give more emphasis on the surgical side, so that every District Hospital must have facility for chest surgery. The mass B.C.G. compaign was started in 1951. Proper record should be maintained of all those vaccinated and it is high time now to evaluate the results of the work already done and it is also necessary to vaccinate the children born since then and to re-vaccinate those who have already had the injection.

Gastro-enteritis. It has lately become a serious problem. Gupta et al have shown that a large number of Gastro-enteritis are really cholera cases. By naming all cholera cases as Gastro-enteritis, we are not so prompt to give a mass anti-cholera inocculation and to take other necessary measures to stop its spreading. Leprosy can be easily controlled provided early detection and segregation is carried out. This postulates the necessity of having pathological laboratories at every District Hospital with proper facilities for free proper examination necessary for diagnosing communicable diseases at an early date, as demanded at the Twentieth U. P. Medical Conference and agreed to by the Director of Medical and Health Services, Uttar Pradesh.

To obtain maximum results every inoculation and eradication campaign like D. D. T. spraying, Synogassing or B.C.G. Vaccination lime-sprinkling campaign should be preceded by an extensive propaganda in that area through press posters and personal talks by health personnel, the members of the medical profession, legislators, officials, social organisations and educational institutions. Approach of the workers should be friendly and not dominating; convenience of the public should be respected as much as possible. With informed and educated public, cooperation would be easy and successful.

Though the medical and health services have been amalgamated at the centre in the person of Director of Medical and Health Services and at the primary health centre in the person of basic doctor, there is no amalgamation at the District and Tehsil level. The result is that the health services have suffered since amalgamation. Curative and preventive medicines should be under a District Medical Administrator at the district level. The Director, the Deputy and Assistant Directors and the District Medical Administrator should possess health qualifications besides medical qualifications.

Public Health Services

No doubt maternity and child welfare centres are doing useful work and their numbers have also increased. There were 385 centres in 1956, employing 503 midwives and 380 dais. By the end of 2nd Five Year Plan there will be 1084 such centres to ensure maternity services to rural population. As compared to the population in U. P., their number is too low. It is therefore necessary to improve the existing training facilities further by construction of hostels and by increasing the rate of stipends payable to them, so as to attract sufficient number of candidates towards these centres. Prior to 1948 this work was entrusted to the Indian Red Cross Society and since then it has been taken over by the Government.

Health Education Bureau

The work done by the Health Education Bureau at the Centre and State remains unknown to the public. U. P. has done almost nothing to educate the people on matters of health, except occasionally issuing "Dos and and Donts" during the outbreak of epidemics. It is however well-known that provisions of the Factory Act with regards to the maintenance of safety and health of the workers are seldom implemented even in Government factories.

It is high time for re-orientation of the whole scheme. Health Education should be taught compulsorily in an integrated way along with general science up to the High School standard. Suitable lessons should be got written by competent persons to be included in text-books. Though Health Education forms part of the syllabus for teachers' training course, nobody takes it seriously and health rules are observed more in their breach than in their observance. Health lectures, delivered to the trainees by medical men and attendance for 15 days in a hospital and 15 days in a public health centre should be made compulsory. Teacher should be entrusted with the health education in the schools and colleges and the welfare centres should look after the rural areas also.

School Children

Children are the future citizens of the country and the strength and progress of India depend upon them. It is the duty of the State to look after them properly through the pre-natal, post-natal, pre-school and college careers. A detailed memorandum has already been prepared and submitted. Government should implement it. The ante-natal and post-natal care upto five years of age should be entrusted to the Maternity and Child Welfare

Centres. On entering school a child should be examined and then the health re-checked every six month or a year. Defects detected during examinations should be treated and necessary vaccinations and inoculations should be given. Another thorough examination should be made on entering colleges. Arrangement can be made with general practitioners on panel system for the examination and treatment of children, or alternatively a part time medical officer may be appointed by every school. Already a large number of schools are charging medical fee from the students and with a little adjustment and Government grant, the scheme can be run successfully.

It is proposed in the Third Five Year Plan to set up 100 school health clinics, so that each clinic may look after 3000 students, along with 10 central units to supervise them and to deal with referred cases.

Children should be given prophylactic inoculations with the triple antigens against Tetanus, Whooping Cough and Diphtheria as is done in other countries to protect them from these diseases in future.

To increase nutrition of children specially of the poor class, it is necessary that there should be a provision for mid-day meal, preferably free or against a small charge.

A suitable provision should also be made for the establishment of play centres and gymnasiums for children through the State Health Boards.

Medical Education

Besides Lucknow, Agra and Kanpur, another medical college has been started in Varanasi. I welcome the new institution and congratulate the city of Varanasi for having it. Claims are being pressed for Allahabad, Aligarh and Gorakhpur, and in course of time there will be no paucity of doctors. I would like to protest strongly against the suggestion of the Planning Commission of reviving the Licentiate Course. It shows that the Government attach less importance to the life and health of the rural population to entrust them with less qualified doctors. The statement of Health Minister, Sri D. P. Karmakar, at the conference of the principals and deans of the Medical Colleges "The permanent, continuous and strong efforts to maintain the highest standard in medical education" is much nearer the mark. It was after a long and mature thinking that medical schools were abolished and it will be a retrograde step to reopen them, to which the Association is strongly opposed. India is a progressive country and in order to meet on equal terms with other countries of the world, it has to keep certain standards. The Medical education committee of the world Medical Association has already considered this question and given certain recommendations. There is no reason for the Government not to accept them. The Bhore Committee and the Medical Council of India have also recommended five years' training.

An important addition to Lucknow Medical College is the introduction of the Diploma and Public Health Course for which so far candidates had to be sent to Calcutta.

Medical science is becoming every year more and more complicated as new researches are being carried out. New subjects are coming up every year to be included in the curriculum. Now we must seriously think how much can a student learn in four or five years' course of the medical studies. This problem has been discussed many times, but upto this time we have not reached any decision. I hope our Medical Educationalists will arrive at it very soon and do something positive, as the students are too much burdened by their studies. Let the basic and important subjects be given due importance and the rare subjects and detailed studies may be left over for two post-graduate training, so that the students may have more time to devote to the practical work in the wards and operation theatres. They should be allowed to develop more clinical sense than to depend always on pathological findings.

The standard of Medical Association is very rightly controlled by the Indian Medical Council, but the vexed question of the salary to teachers in teaching institutions has been the cause of much discussion, both in public and by the Government. It has now become necessary that the private practice of teachers will have to be stopped, if a high standard of teaching and research work can come out from our State Medical Colleges.

It is also necessary to increase the number of teachers and to conform to the standard of teacher-student relation as prescribed by the Indian Medical Council, secondly to provide facilities for the higher training for the teaching staff.

As regards research work in medical and allied sciences, nothing worth noting has been done so far. Our professors and teachers in Medical Colleges are in the best position to carry out research, but they should give greater time and attention to it. This can only happen if the Government gives them better emoluments and stop private practice. It shall be a great benefit to our Medical Science and our country as there are so many indigenous drugs which may prove a boon to the humanity at large, if proper research work is done on them.

Nutrition

The problem of nutrition is as important, rather more important, than the problem of medicine. Indian diet is not only insufficient in quantity but unbalanced. Intensive and sustained propaganda has to be carried out to correct these defects. Mention has already been made about mid-day meals in schools, colleges and offices and in deserving cases it should be subsidised by the Government.

Drugs and Instruments

It is a fact that the cost of medicines, specially of the antibiotics and cortisones which are now-a-days widely used in Allopathic system, is quite high and a great hindrance for the proper medical aid to the poorer classes. The Pharmaceutical Enquiry Commission set up by the Government of India in 1953, suggested certain measures to make the country gradually self-sufficient in this sector. It is gratifying to know that the Government of India has signed an agreement with the Soviet Government to put up plants for manufacturing antibiotics to make synthetic drugs and alkaloids, and another factory for Surgical Instruments. I congratulate the Government that it is going to start one plant at Hardwar in cooperation with the Russian Government. Thus we shall be able to provide cheaper drugs to the public and bring down prices of Allopathic medicines to meet the demands of poor classes.

It is a happy augury that authorities are anxious to make the country self-sufficient in medicines and instruments, but the progress has been very slow. Present world situation demands that active energetic actions may be taken to achieve the object.

Drug Act

The Drug Act 1940 and Drug Rules 1945 have no doubt improved the conditions, but there is enough scope for more improvements. It is good that they are being amended in 1960, and the Indian Government would appoint inspectors for stricter control. But the proposal to enable the State Government to exempt any person or class of persons, who are not registered with the State Medical Council under section VII of 1916 from the operations of the Act, is a retrograde step and deserves outright condemnation, as it will mean by-passing the Medical Council and entry of undeserving persons by the back door. The plain effect will be quackery inspite of their claiming to stop it. Recently Government has

banned use of Pharmacopoeial drugs by persons who are not registered under section VII of 1916. I hope Government would stick to the decision as their use by untrained and undertrained medical practitioners is highly dangerous for the patient and the public. I would request the Government to study the working of the Drug Act and plug loop-holes that exist with the help of I.M.A. If the act is properly enforced, it will to a great extent help in controlling quackery.

Sales Tax

In my opinion there should not be any Sales Tax on the mixtures which are dispensed to our patients. We already pay Sales Tax when we purchase our drugs from manufacturers, wholesalers or retailers for our dispensing purposes. When we make mixtures for our patients by mixing so many drugs in a phial, it does not become a Commercial Commodity. The same mixture cannot be dispensed to any other patient as some changes in ingredients have always to be made according to the symptoms, disease and age of a patient. So these mixtures can never be called a Commercial Commodity. Hence dispensing cannot be interpreted as manufacturing.

Above all, the most important fact is that the Government of U. P. has itself defined "Manufacture" in the Drug Act 1940 of Government of India and accepted by our U. P. State, Chapter I Section 2 (bbb) that is "Manufacture does not include the compounding, dispensing or packing of any drug in the ordinary course of retail business". Hence dispensing is not manufacturing and so no Sales Tax should be levied.

Taking the above facts into consideration, it is high-handedness on the part of the Government to realise Sales Tax on dispensing by the doctors to their patients. So a test case has been filed by us (by our Kanpur Branch) before the High Court and its judgment is awaited.

Family Planning

During 1956 birth rate was 15·4 and the death rate was 8·6 hence the increase rate was 6·8. With improved health and medical services, the death rate is bound to fall and the increase rate will be further enhanced. Food production is already low and with best efforts it cannot be increased to the same proportion. To provide food to all the citizens this assumes a serious problem and this object can be achieved only when the increase rate in population is decreased through family planning. In this day only food can be provided to all and their living standards raised.

During the Second Five Year Plan 150 Family Planning Centres have been established in rural areas besides 25 urban clinics. In the Third Five Year Plan there is a proposal for increasing them by 719 rural clinics and 25 urban. There is also a proposal for opening a Regional Family Planning Centre at Lucknow for training family planning workers.

This will also require the necessity of an intensive propaganda and facilities for family planning among the sections which need it most. Guidance on family planning should be available at every maternity centre, primary health units, women's conferences and the labour and E. S. I. dispensaries. Medical Association and other social bodies can also help in the programme.

Government Schemes and Public Co-operation

In socialist age social services become the duty of the State and they are rendered by the Government machinery. Our present society is not completely socialist. Its aim is socialist pattern of society, hence all services neither are nor can be rendered by the State. They can be rendered by the public bodies with the cooperation and help of the Government. Several instances of these have already been given above. Others are anti-tubercular work, Kusht Nivaran Sangh and health drives. The profession has always extended its co-operation to the authorities. The Government should also extend its co-operation to such bodies and work hand in hand to achieve a greater success. Therefore it is imperative on the part of the Government to invite opinion of our Association on all important matters before final decisions are taken by the Government, and also give due representation to the Association on all such committees and conferences.

I would like to mention here that the repeated offers of co-operation and suggestions have been completely ignored and side-tracked by our Government. It is hoped that effective measures would be taken now to break the bureaucratic attitude towards public opinion and co-operation.

Health Journals

India is so deeply steeped in ignorance that the mortality rate is high and the life expectancy is low as compared with other foreign countries and the Government measures to improve them do not achieve the success they deserve. In order to remove these defects the Association is publishing "Your Health" in English and "Apka Swasthya" in Hindi at great loss to the Association. It pains me to note that they have not received the encouragements that they should have got from the authorities and even from the public. It is in the interest of the nation that such literature be encouraged and be subsidised. I hope the Government and others will realise their duties and do something for these journals.

Indian Medical Association

This Association was formed for the (1) Promotion and advancement of Medical and Allied Sciences (2) Maintenance of the honour and dignity and upholding the interest of the medical profession and (3) Abolition of compartmentalism in medical education and medical services and registration. Even since its formation it has been working hard for the attainment of these objects. At times it has succeeded and some times failed in its attempts, but its voice is being increasingly heard by the authorities and this tempo is bound to increase proportionate to its strength. I therefore, appeal to every member of the Medical Association, whether in service or outside, whether postgraduate or licencee, to join this Association and make it a strong and representative body and incidentally protect your own interest. Inspite of our best efforts we have not been able to enrol a very large number of our graduates.

Though I am glad to note that the number of branches in U. P. State Branch have increased during the last year from 51 to 55, I am sorry that the membership has not gone up. This is a very sorry affair of our Association. The percentage comes to about 20 per cent of the Registered Medical Practitioners in the State who are members of the I. M. A. It is an imperative duty of each one of us to enrol at least two members in the next coming year.

I may add that the brethren must also note that no amount of effort on the part of the Government can bring about the desired result in the national Development Programme unless each individual in the country, medical or otherwise, whole-heartedly does his best in the sphere of Health Education and voluntary service as and when needed. We should also intensify our efforts to do greater good to the public without looking to the Government for any initial financial assistance. The first and the most important thing to remember is that labour with sincerity of purpose always pays. Please put in your best in each and every work that comes before you.

It is a matter of regret that inspite of repeated appeals in the last few years we have so far made little efforts to contribute to All India Office Building Fund. It is imperative that we should have a good and well kept office at Delhi. I request and expect that we shall make an all out effort this year to contribute liberally to the All India Building Fund and thus add to the prestige of our Association.

Friends, I have taken a great deal of your precious time, but I have tried to place a panoramic picture of the medical profession as it is today before you, so that the public and the Government may appreciate the problems of the medical profession and do the needful.

"Medicine as I see it, is an art based on many sciences; the student, to be worthy of his art, needs ever to pursue knowledge and, even more, to have the spirit of knowledge. But in the application of his art to human needs, the doctor requires more than scientific knowledge, he needs, in addition, insight, understanding, sympathy and perhaps beyond these, the religion of helpfulness." (*Lord Dawson*).

The following resolutions were passed at the conference :

1. Condolence : This Conference places on record its deep sense of sorrow at the demise of the following members of the Association and conveys its heartfelt sympathy to the members of the bereaved families : (1) Dr. M. P. Srivastava, Allahabad. (2) Dr. R. D. Maheshwari, Meerut. (3) Dr. D. P. Govil, Meerut. (4) Dr. B. S. Rathke, Dehra Dun. (5) Dr. M. P. Verma, Varanasi. (6) Dr. (Capt.) Shyam Lal, Pratapgarh. (7) Dr. B. N. Mahey, Rampur. (8) Dr. (Mrs.) G. W. Tiwari, Muzaffarnagar. (9) Dr. G. N. Vyas, Agra. (10) Dr. Lekhraj Singh, Aligarh. (11) Dr. S. D. Agarwal, Muzaffarnagar. (12) Dr. G. P. Dasgupta, Varanasi. (13) Dr. V. S. Chaturvedi, Varanasi. (14) Dr. K. N. Upadhyay, Muzaffarnagar.

2. Whereas further recruitment of Licentiates has been stopped in Government services, be it resolved that the Government of U.P. should consider with sympathy the cases of medical Licentiates in Government or Local Bodies' services and promote them to the I.M.S. II on the basis of their long service and experience.

3. Whereas it has been observed that Local selfgoverning bodies have failed to perform their part satisfactorily as far as Public Health and Cleanliness of the town are concerned,

Whereas Health Officers are greatly handicapped to perform their duties to the full extent due to lack of the final control and authority over the sanitary staff,

Whereas it has been observed that the work cannot be carried out satisfactorily under the existing conditions, this Conference urges on the Government of Uttar Pradesh in the interest of health and happiness of its people, to take steps so that the functions relating to public health of Municipalities should be taken over by the Government in its entirety.

4. Whereas there has been some improvement in the health conditions of the State as a result of the implementation of the First and Second Five Year Plans,

And whereas such improvements fall far short of the recommendations of the Bhore Committee Report,

And whereas only 3 per cent of the total outlay has been earmarked for Health in the Draft Third Five Year Plan, while the Central Health Council had recommended 10 per cent and the Indian Medical Association has suggested 15 per cent,

And whereas the Conference is fully convinced that unless substantial priority is given and sufficient sums are allotted and utilised properly and well in time, no headway is possible in the State in the matters of Health,

Be it resolved that at least 15 per cent of the total outlay of the Third Five Year Plan be earmarked and utilised properly and well in time on Health and Medicines.

5. Whereas the Planning Commission has recommended a Licentiate course for medical education to produce cheaper doctors to begin with and allowing men to obtain a degree after a few years' work in rural areas. and after further training,

And whereas the undesirability of such a course was emphasised by the Bhore Committee,

And whereas this entails admitting students with Intermediates in Biology,

And whereas the Government after being fully convinced, abolished the medical schools,

And whereas experience has shown that in the past also when the Medical Schools were turning out licentiates, the majority of them did not settle in the villages,

And whereas these admissions will not mean any economy in time and money,

Therefore be it resolved that the Conference strongly opposes the suggestion of creating a class of practitioners not recognisable by the Medical Council of India or anywhere else in the world.

6. Whereas there is one bed for 4,000 population while the minimum requirement is 1 bed for 1,000, resulting in a long waiting list and waste of much valuable time before the proper treatment is started. This is in addition to much avoidable suffering,

Be it resolved that the Government should gradually raise the hospital beds to the ratio of 1 bed for 1.000 population.

7. And whereas children are the future hope of the country for its defence and development,

Whereas the present system of medical examination of school children is unsatisfactory,

And whereas proper care and follow up are not carried out for the defectives,

Be it resolved that the Government should in consultation with the Indian Medical Association draw up a plan for the care, management, and treatment of the children through pre-school and college careers, including in the scheme, periodic examinations, treatment, prophylaxis, proper nutrition and physical development.

8. Whereas the U.P. Government is running the Employees' State Insurance Scheme in Uttar Pradesh on the service system giving satisfaction neither to the doctors belonging to the E.S.I. Scheme nor to the patients because it does not allow the patient the right to choose his own doctor,

And whereas by running the scheme on the service system a large number of service doctors who could have been more usefully posted in areas where there are no doctors, have been locked up in cities where there is no dearth of younger doctors,

Be it resolved that the Employees State Insurance Scheme be run on the panel system in Uttar Pradesh.

9. In view of the increasing demands of Plasma and other blood expanders and considerable difficulty experienced for the availability of these materials either due to restricted import or due to limited availability in the country,

Be it resolved that the U.P. Government should encourage the production of Plasma by starting a centre for production of Plasma and other blood expanders earliest and the Indian Medical Association, U.P. State Branch appeals to its members to come forward with their own blood donations to help the scheme.

10. Whereas the incidence of Tuberculosis in Uttar Pradesh is fairly high,

And whereas it is believed that the incidence continues to rise,

Be it resolved that effective, preventive and curative masses like mass Radiography and establishments of clinics for the domicilliary treatment of the disease be made available and be it further resolved that their patients in employment be given adequate scale.

11. *The Recent Floods*—The recent floods in the various rivers of the State especially the Gomati have caused miserable havoc to the life and property and have devastated vast areas.

This Conference expresses its sympathies with the sufferers of the flood, and appreciates the relief work undertaken by the members of the Indian Medical Association and other non-official bodies. It urges upon the Government to enquire into the causes that led to this catastrophe and the delay in undertaking relief and rescue measures on the receipt of the flood warning. It further urges upon the Government to grant immediate relief to the sufferers by way of grants and loans repayable in easy instalments for their relief and rehabilitation.

It further urges upon the members of the medical profession to donate liberally towards flood relief fund and to take up medical relief in the flood affected areas. The donations be sent to the Honorary Secretary, Indian Medical Association, U.P. State Branch, Lucknow.

BRANCH NOTES

AGRA BRANCH—Election of office-bearers for 1960-61 held on 11-10-60, resulted as follows: President—Dr. K. S. Mathur; Vice-Presidents—Dr. A. Backaya, Dr. Nawal Kishore; Secretary—Dr. S. K. Das; Jt. Secretary—Dr. B. P. Agarwal; Treasurer—Dr. Ved Prakash; Auditor—Dr. H. C. Jain; Provincial Council Members—Dr. S. K. Das, Dr. S. P. Srivastava, Dr. K. N. Saxena; Central Council Member—Dr. S. K. Das.

A meeting held on 1-11-60 was addressed by Dr. H. N. Shivapuri, President, I.M.A. Dr. Shivapuri spoke on his experiences of the recent tour, condemned government policy about the reintroduction of the licentiate course, dealt with quackery and appealed for donations to the Central Building Fund.

AHMEDABAD BRANCH—The office-bearers elected for 1960-61 are: President—Dr. Amubhai P. Shukla; Vice-Presidents—Dr. Narendra H. Desai, Dr. Chandrakant N. Parikh; Hony. General Secretary—Dr. I. G. Bhatt; Hony. Jt. Secretaries—Dr. R. C. Dalal, Dr. K. C. Dalal; Hony. Treasurer—Dr. Hariprasad S. Shah; Hony. Librarian—Dr. Anand S. Shah.

ALIGARH BRANCH—A meeting was held on 8-10-60. Thirteen members were present. Office-bearers for 1960-61 were elected with Dr. Satnam Singh as president, Dr. S. B. Lal as vice-president; Dr. R. K. Maheswari as secretary; Dr. M. C. Singhal as joint secretary; Dr. Hafeezur Rehman as editor. A talk was given by Dr. M. C. Singhal on the Importance and Uses of Routine Blood Examination in Medical Practice.

ALLAHABAD BRANCH—The following office-bearers of the branch were elected at its Annual General Meeting held on 1st December 1960: President—Dr. Pran Nath Gupta; Vice-Presidents—Dr. A. Mukerjee, Dr. J. R. Gadeock, Dr. R. D. Kapoor; General Secretary—Capt. Reginald J. Burke; Joint Secretary—Dr. K. S. Neogi; Social Secretary—Dr. Ramesh Chandra; Scientific Secretary—Dr. A. K. Mukerji, Sports Secretary—Dr. D. B. Chandra; Treasurer—Dr. K. P. Srivastava; Librarian—Dr. A. K. Agarwal; Representatives for the Provincial Council—Dr. A. Mukerjee, Dr. Ramesh Chandra, Dr. K. N. Srivastava; Representatives for the Central Council of I.M.A.—Dr. K. P. Srivastava, Dr. Pran Nath Gupta; Representative to the District Epidemic Advisory Committee—Dr. Brij Raj Kishore.

ANANTAPUR BRANCH—The annual general body meeting was held in the Council Hall of the Anantapur Municipal Office on 30-10-60 with Dr. M. P. Sarma in the chair. The annual report and statement of accounts for 1959-60 were read by the secretary and adopted. A ballot for the election of President and three vice-presidents of the Andhra Pradesh Branch was taken. The following office-bearers for 1960-61 were unanimously elected: President—Dr. M. P. Sarma; Vice-President—Dr. C. Bhaskara Reddy; Secretary-Treasurer—Dr. V. K. Rajaram Rao; Jt. Secretary—Dr. A. S. Reddy; Central Council Representative—Dr. V. K. Rajaram Rao; State Council Representative—Dr. H. Gopal Rao.

The following cases were demonstrated by the staff of Government Headquarters Hospital, Anantapur: (1) A case of Hydronephrosis of the Right Kidney of Undiagnosed Aetiology, (2) A case of Hydronephrosis of the Right Kidney due to Calculus, (3) A case of Multiple Secondary Malignant Deposits in Ribs, Femur and Pathological Fracture of Humerus and Ribs due to Primary Lesion of Uterus. (4) A case of Malignant Deposits in the Hip Joint due to Primary Lesion of the Thyroid Gland. Dr. G. Sreeramulu read a paper on Kwashiorkor, Dr. C. A. Satyanarayanan Chetty read a paper on Discharging Ear and its Treatment; The meeting terminated with the usual dinner.

ANDHRA PRADESH STATE BRANCH—The annual report for 1959-60 states that it has 34 branchees and about 1400 members. The state working committee appointed during the year, a sub-committee to submit a memorandum to the Mudaliar Planning Sub-Committee (Health and Medical Education). The branch took a major step in organising the College for General Practitioners in Hyderabad city, the first of its kind, and this was inaugurated by the Union Health Minister.

The present year's programme, it is stated, includes family planning clinics, co-operative medical stores, health insurance scheme and school health.

BALLIA BRANCH—The annual general meeting was held on 9-10-60 at the District Hospital, Ballia, with Dr. Ved Ratna in the chair.

The Hony. Secretary read the annual report for 1959-60 and presented the accounts.

The following office-bearers were elected with Dr. Ved Ratna as President; Dr. S. P. Saxena as Vice-President; Dr. C. L. Gupta as Secretary; Dr. I. W. Herbert as Jt. Secretary; Dr. P. K. Chatterjee as Representative to Central Council.

A symposium on Tuberculosis was started and Dr. A. S. Gupta gave a thorough account of Surgical Aspect.

BANARAS BRANCH—At a meeting held on 29-11-60 at the association premises a condolence resolution was passed on the sad and untimely death of Dr. K. P. Roy, a member of the branch.

BAREILLY BRANCH—A meeting of the executive committee was held on 5-11-60. Nineteen members were present. Dr. C. M. Aga presented the best branch trophy of the U. P. State Branch to this branch. The new constitution of the association was read by the president and suitable amendments were suggested after discussion. Routine business was transacted.

The first general and clinical meeting was held on 16-11-60. Dr. C. M. Aga presided. Fifty members were present. The new constitution and bye-laws were put before the house and with some amendments and were approved. Dr. Dhillon suggested that a member elected for the Hospital Advisory Committee should be one from the members of the Executive Committee and it was approved. Dr. Bansal, Dy. Director, Malariology talked about the Malaria Surveillance Programme. The budget for the year was presented and adopted.

A clinical meeting was held on 30-11-60. The meeting condoled the death of the wife of Dr. Pratap Singh. Dr. Topazen, the American Oral Surgeon gave a talk on Ankylosis of the Jaw and its Treatment. He demonstrated the lecture by projecting slides.

BARUIPUR-RAJPUR BRANCH—The annual general meeting of the branch was held on 16-12-60. Capt. A. C. Banerjee presided. The annual report of the last year was presented by Dr. P. K. Roy Chowdhury, the retiring secretary. Office-bearers for 1960-61 were elected with Dr. Shibdas Bhattacharya as president; Dr. B. K. Mukherjee, Dr. A. C. Dutta as vice-presidents; Dr. S. Bhattacharya as hony. secretary and treasurer. Repre-

sentative to the Central Council and the Provincial Council—Dr. P. K. Roy Chowdhury.

The annual report of the branch for the year 1959-60 shows that 8 general meetings, 2 emergent meetings and 1 film show was held during the year. Scientific subjects were discussed in the meetings. The 19th Bengal Medical Conference was held in February 1960.

BERHAMPORE BRANCH—The annual general meeting of the branch was held on 27-12-60. The annual reports and the accounts were adopted. Office-bearers for the year 1960-61 were unanimously elected with Dr. A. K. Dutta as president; Dr. S. Baral as vice-president; Dr. K. C. Chaudhuri as secretary; Dr. A. Thakur as asst. secretary; Dr. T. Tarafdar as treasurer; Dr. J. N. Addya as auditor.

BHAVNAGAR BRANCH—The office-bearers elected for 1960-61 are: President—Dr. D. P. Andharia; Vice-President—Dr. K. R. Patel; Hony. Treasurer—Dr. M. M. Chohan; Hony. Librarian—Dr. B. G. Gandhi; Hony. Jt. Secretaries—Dr. K. A. Kamdar, Dr. J. J. Buch; Hony. Auditor—Dr. S. C. Jagal; Central Council Representative—Dr. D. P. Andharia; Territorial Council Representatives—Dr. A. M. Oza, Dr. P. S. Oza, Dr. D. P. Andharia.

BIJAPUR BRANCH—The annual general body meeting was held on 6-11-60. Office-bearers for 1960-61 were elected with Dr. G. N. Mangalvedhekar as president; Dr. Jigajinni as vice-president; Dr. M. D. Mahindrakar as hony. secretary; Dr. V. G. Watwe as joint secretary. Dr. R. R. Deshpande as Central Council member and Dr. G. R. Bidri as State Council member. Dr. Mahindrakar read a report of the last year's activities. There were 47 members; 3 business meetings, 3 clinical, 6 managing committee, 1 medical film show, 1 social gathering, 1 farewell and 2 reception meetings were held. Dr. V. R. Naidu, Director, Medical Services, Mysore State, was the chief guest at the meeting held on 27-11-60. Dr. G. N. Mangalvedhekar presided. Dr. Naidu spoke on the health plans of the state and requested the co-operation of the members. Twenty-five members were present.

CALCUTTA BRANCH—The annual report for 1959-60 states that the year opened with 1,608 members on the roll; 105 new members were elected and 132 were lost by transfer, migration, death, etc. The Executive Committee had 14 meetings during the year. Some notable events of the year were: Implementation of the school health programme through the School Health Bureau; Colonel Calvert Memorial and Manas Kumar Memorial Orations; employment of doctors outside the state directly through the Branch; visits from Dr. S. Wand, Chairman, B.M.A. Council and Dr. D. P. Stevenson, Secretary, B. M. A. Other visitors included the Russian scientific delegates. Receptions were given to Dr. Bram Rose of Montreal, Canada, Dr. K. Betke of Freiburg and Dr. Pietro de Nicola of Italy. The Doctors' Welfare, Public Health, Library, Building, Ethical, Social and Entertainments, Scientific, Public Relations, Science, Culture and Humanity and Medical Sub-committees; B. S. I., Manas Kumar Roy Chowdhury Memorial, and Hospital Services Committees and Special Committees for Corporation Doctors and Revision of Rules shouldered a lot of responsibility and did much useful work.

CHITRADURGA BRANCH—Swami Chaitanya Deo of Nagpur delivered a lecture on Psychology and Physiology on 8-10-60 to the members of the above association at District Hospital premises. Dr. H. S. Lakshminarayana presided.

A clinical meeting was held a Malladihalli in the Anathasevashram, Malldi Halli. Holakakere Taluk, on 16-11-60. Dr. H. S. Lakshminarayana presided.

Dr. C. S. Narahari Rao delivered a lecture on Maternity and Child Welfare in the Western Countries. Dr. H. S. Lakshminarayana gave a lecture on Antibiotics: Uses and Abuses.

CHAPRA BRANCH—A meeting of the branch was held on 3-12-60. Dr. Akhoury B. P. Sinha presided. Dr. G. B. Sahay, Retd. Principal of Darbhanga Medical College, gave a talk on Important Medico-legal Problems based on his recent experiences.

COIMBATORE BRANCH—A monthly meeting of the branch was held on 26-11-60. Seventy members were present. Dr. D. Sundareswaran, presided. Dr. N. S. Ramamoorthy, Associate Secretary, read the minutes of the monthly meeting held on 22-10-60. Dr. M. P. Jesudasen, Hony. Secretary, read the proceedings of the meeting of the Committees held on 9-11-60 which were adopted.

Dr. V. Srinivasan gave a lecture on My Experience in the Treatment of Rheumatoid Arthritis.

DEVANGERE BRANCH—The general body meeting of the branch was held on 15-9-60. Office-bearers for 1960-61 were elected with Dr. S. N. Dhananjay as president; Dr. B. R. Karnad as vice-president; Dr. M. Ananda Rao as hony. secretary; Dr. P. Nagara Gowda as Central Council member; Dr. G. V. Shankarappa as provincial council member.

A clinical meeting was held on 24-9-60. Dr. D. Prahlada Rao, Hony. Ophthalmic Surgeon, Government Headquarters Hospital, spoke on Some Aspects of Ophthalmology in relation to General Practice. Dr. M. R. Shivashankarappa presided.

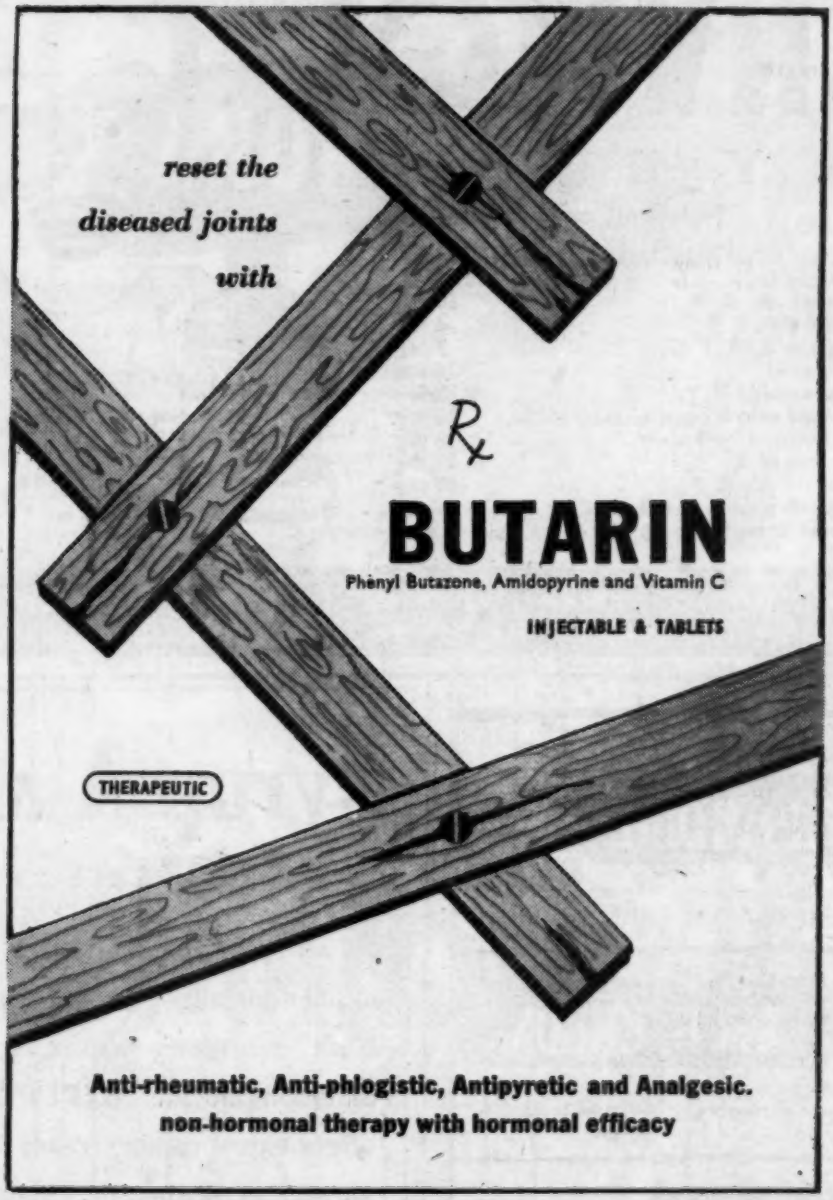
DOOARS BRANCH—A joint meeting of the Presidents and Hony. Secretaries of the Jalpaiguri, Siliguri, Darjeeling, Alipurduar and Dooars Branches was held at Siliguri Municipal Hall, on 20-11-60 under the auspices of Dooars branch. Dr. G. C. Ghosh President, Siliguri Branch, was in the chair. The meeting discussed the pay-scale of doctors serving under ITPA tea gardens of West Bengal, and various other subjects of common interest of North Bengal.

Messrs. Albert David & Co. Ltd. and Messrs. Dey's Medical Stores (P) Ltd., provided the members with 'Lunch' and 'Tea' respectively. It was decided that the next meeting of all the North Bengal Branches will be held at Jalpaiguri.

SOUTH CALCUTTA BRANCH—The annual general meeting of the branch was held on 12-11-60. Office-bearers for 1960-61 were elected with Dr. R. C. Sen as president, Dr. C. C. Bhattacharyya as hony. secretary and treasurer.

TIRUCHY BRANCH—The 31st annual meeting of the branch was held on 23-10-60. Seventyfive members were present, besides a number of visitors. Dr. M. Viswanathan gave a lecture on Choice of a Diuretic. Dr. A. S. Ramakrishnan gave a lecture on Surgery in Diabetes. Office-bearers for 1960-61 were elected with Dr. P. V. Sundaram as president; Dr. T. V. Ranganathan as vice-president; Dr. N. V. Muthu Krishnan as hony. secretary; Dr. M. V. A. Iswaran as joint secretary and treasurer; Dr. V. Enok, Dr. A. Dharmarayan, Dr. V. K. Ranganathan, Dr. T. V. Srinivasan, Dr. N. C. Subramanyam, Dr. S. Venkatesan, Dr. N. V. Muthu Krishnan as State Council members; Dr. T. V. Srinivasan and Dr. V. K. Ranganathan as Central Council members. After lunch the new president took the chair. Dr. P. K. Krishnankulty gave a lecture on Some Aspects of Congenital Heart Diseases.

UTTAR PRADESH STATE BRANCH—The 26th annual meeting of the branch was held on October 23, 1960 with Dr. B. N. Bhalla in the chair. The annual report and the annual accounts were adopted. Office-bearers for 1960-61 were elected with Dr. B. N. Bhalla as president; Dr. H. S. Pant, Dr. Mohal Lal, Dr. K. K. Varma as vice-presidents, Dr. R. N. Gupta as hony. State secretary; Dr. B. N. Mehrotra and Dr. Satwant Singh as hony. State joint secretaries; Dr. M. M. S. Siddhu as hony. State treasurer; Dr. B. N. Bhalla and Dr. R. N. Gupta as representatives on the Central Working Committee with Dr. M. M. S. Siddhu and Dr. Y. D. Kapur as alternates.



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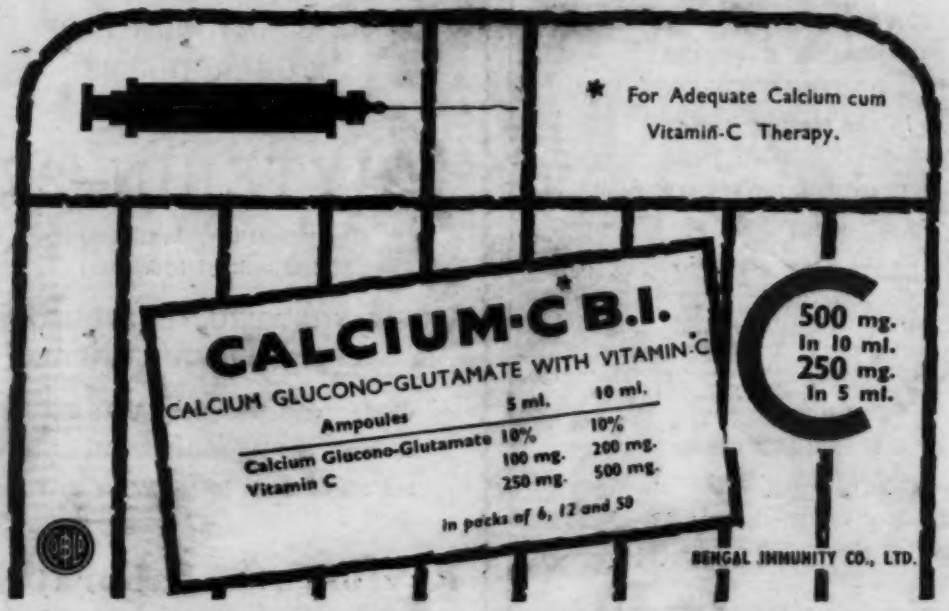
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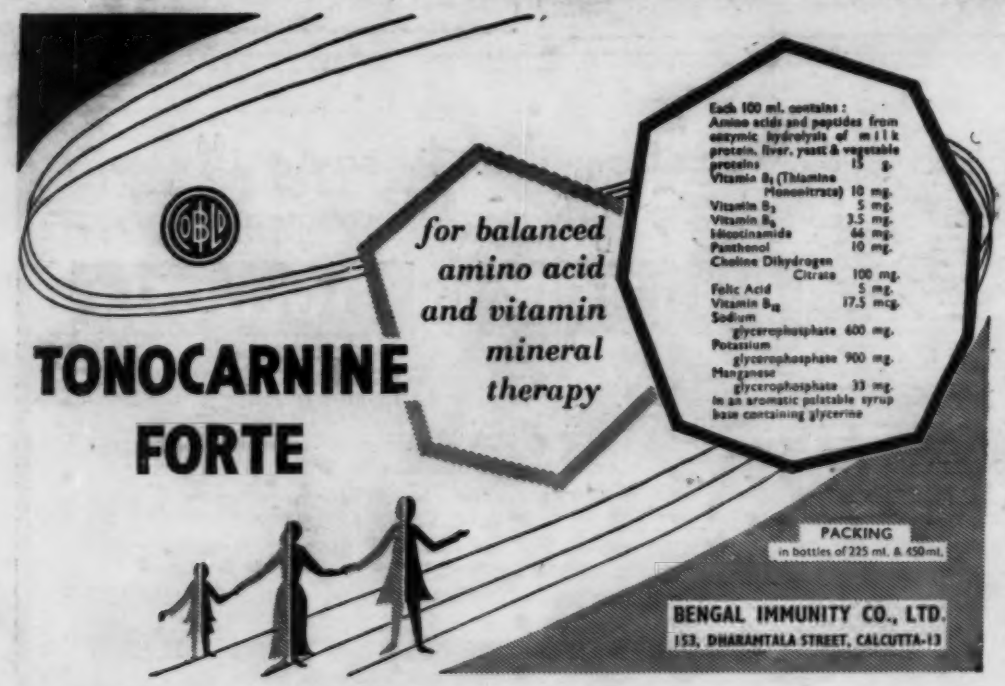
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